

**THE
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation
INCORPORATING

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DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders, 1940, No. 629

TO CALLERS AND TELEPHONERS

Our office hours until further notice are:—

Mondays to Fridays - 9 a.m. till 5 p.m.

Saturdays - 9 a.m. till 12.30 p.m.

The office will be closed on the first Saturday in every month until November 2, inclusive

With the object of conserving paper by avoiding the return of unsold copies, readers are advised in the interests of all concerned to place a regular order for THE RAILWAY GAZETTE either with their newsagent or direct with the Publisher

E.P.T. at 100 per cent.

THE Government has shown its determination that as far as possible it will insist that the profit margin in this war shall be ruled out so far as productive industry is concerned. To this end it has been announced that, as from the beginning of April last, Excess Profits Tax on all undertakings is to be raised from 60 per cent. to 100 per cent. In effect this means that once the profit earned by an undertaking reaches that of its standard year—1935, 1936, or the average of 1935-37 or 1936-37—all of any surplus goes directly to the Exchequer. Mr. Arthur Chamberlain put the matter succinctly at the annual meeting of Tube Investments Limited last December when he said: "Once you step into the field of E.P.T. you can earn greatly increased profits and be left with little net gain, and, conversely, can earn much smaller gross profits with very little loss to your net figure." Concerns which, but for the war and the switching of their energies to the production of armaments or similar essential supplies, might have shown lower profits than those of the standard years are at least permitted to retain up to the level of those years. Whether it is wholly wise to attempt to obliterate entirely the profit motive when the great need is for maximum production will be questioned in some quarters, but the Government probably feels that national sentiment coupled with its own new emergency powers will suffice to achieve the end sought.

* * * *

Controlled Undertakings Order

On Saturday last an Order in Council was issued giving the Minister of Supply powers to declare undertakings, which are or should be principally engaged on war production, to be controlled undertakings. This means that Ministers of Departments for which supplies are being produced will have power to prescribe the war work which the firms have to carry out, the hours which they are to work, the labour they are to employ, and the price of the articles produced or supplied or services rendered. A Minister's directions will override any existing legal or other obligation that may conflict with them. There is also power to ensure by inspection that directions are carried out. The Order also confers power to issue orders or directions to any undertaking whether or not it has been declared to be controlled. Mr. Herbert Morrison, the Minister of Supply, in a statement on the eve of the issue of the Order, said that as far as he was concerned he intended that the control should be exercised in such a way that, where existing managements were doing their job well and with public spirit and efficiency, they would be interfered with as little as possible. Concerns engaged on Government contracts or sub-contracts were asked to continue their work with the utmost vigour until any further directions superseding the arrangements under the existing contracts were received.

* * * *

Goodwill in Transport

In wartime the need for transport operators to cultivate the goodwill of traders may be less apparent but indeed is more essential than in peace. The national effort provides a multiplicity and great volume of traffic, but often the carriage of these goods, and the need to give them priority, entails inconvenience and delay to more normal traffic. In the road transport industry the disabilities suffered by users as a result of the war are more easily apparent and the need for fostering public goodwill more obvious, but in varying degrees both forms of transport should bear in mind the necessity of preserving an asset which has cost much to build up and can be destroyed so

easily. We notice that our contemporary *Motor Transport* has recently been at pains to advise its readers how best to preserve friendly relations with road haulage customers. They are urged to take their customers into their confidence, to keep the advantages of road transport well to the fore, and to encourage the feeling of individuality inherent in road transport. The important reactions which follow the degree of efficiency displayed by a telephone operator employed by a firm are well worth stressing. Often this employee is the first means of contact between firm and customer, and an initial impression may well prove lasting.

* * * *

Overseas Railway Traffics

A general setback took place in Argentine railway traffics during the 46th and 47th weeks of the current financial year, and in the aggregate Buenos Ayres Great Southern receipts to date show a decrease of 31,000 pesos. Buenos Ayres Western total figures are still 1,384,000 pesos to the good. Sterling figures of Brazilian railways are more encouraging, the increases to date being £36,700 on the Great Western, £55,740 on the Leopoldina, and £83,569 on the San Paulo.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
Buenos Ayres & Pacific*	47th	1,330	206	64,391	2,684
Buenos Ayres Great Southern*	47th	1,895	196	108,889	31
Buenos Ayres Western*	47th	677	291	36,501	1,384
Central Argentine*	47th	1,786	298	81,535	7,981
		£	£	£	£
Canadian Pacific	20th	578,200	12,000	11,384,400	1,882,800
Bombay, Baroda & Central	6th	316,500	143,575	1,175,925	109,575
India					

* Traffic returns in thousands of pesos.

Central Uruguay receipts for the 47 weeks of the financial year amount to £997,601, an increase of £126,860. In Uruguayan currency the increase for the same period is \$234,338.

* * * *

Southern Railway, U.S.A.

The system of this company, with its affiliated and allied lines, comprises 8,000 miles of track, serves Washington, Cincinnati, Louisville, St. Louis, and Memphis as its northern and western gateways and important ports from Norfolk on the Atlantic to New Orleans on the Gulf. Ton-mileage of freight traffic in the last six months of 1939 was greater than in any half since 1929. In comparison with 1938 freight revenue increased in 1939 by 12.88 per cent. and total operating revenues by 10.89 per cent.

	1938	1939
Passengers	3,359,116	4,064,111
Freight, tons	30,060,897	34,127,098
Freight, ton-miles	6,203,702,217	7,158,324,068
Average haul, miles	206.37	209.75
Operating ratio, per cent.	71.12	68.59
	\$	\$
Passenger revenue	8,786,241	8,741,860
Freight revenue	72,950,429	82,344,875
Total operating revenues	89,419,110	99,153,560
Operating expenses	63,593,000	68,009,468
Net railway operating income	14,343,565	20,521,866

After payment of all charges there was a surplus in 1939 of \$6,487,336 compared with a deficit of \$497,772 in 1938.

* * * *

Two Investments—Savings and Careers

The Illinois Central Railroad has now issued its third special report, in simplified leaflet form, for "All the Members of the Illinois Central Family," and dealing with operation in 1939. These special annual reports are issued "in order that those who are investing their current working careers in the railroad may share in knowledge of its operations and results with the stockholders, who have invested their savings, the products of previous working careers." Because of the war, traffic from August to October "picked up at the fastest rate in history; there was an increase of one-fourth in the demand upon rail-

roads as a whole for freight transportation." Despite earlier disappointments, therefore, the Illinois Central traffic and revenues, rising proportionately, showed great improvement at the close of the year. As compared with 1938 operating revenues rose by \$6,000,000 and working expenses correspondingly increased by \$5,000,000, the net revenues from transportation showing an improvement of \$1,000,000, these being round figures. Other business improved by \$113,000, so that net income was up by \$1,113,000, and totalled \$2,335,775 or roughly 2 per cent. of the gross earnings, \$114,029,446. The remaining 98 per cent. was swallowed up in maintenance and depreciation, 29 per cent.; transportation and traffic costs, 38 per cent.; taxes, 9 per cent.; rents, 5 per cent.; interest, 13 per cent.; and miscellaneous, 4 per cent.; proportions that are shown graphically in this report as so many cents, or "pennies," out of a pile of 100, a dollar.

* * * *

Pullman Incorporated

The annual report of Pullman Incorporated and its subsidiary companies for the year 1939 shows a consolidated net income of \$4,009,475, an increase of \$1,713,646. Of this \$2,630,298, compared with \$2,504,266, came from its sleeping car business; \$418,348, against \$239,933, from its manufacturing business; and \$1,684,098, against \$862,922, from investments. Cars owned in 1939 totalled 7,052, or 526 less than in the previous year, and cars operated at 5,100 were 24 fewer. Car miles operated were 825,745,133, or 7,224,017 more than in 1938. American railroads placed substantial freight car orders in the last four months of 1939, and a satisfactory proportion was booked by the manufacturing subsidiary of the corporation. Ten consecutive annual reductions in the average number of freight cars in the Class I railroads have occurred since 1939, resulting in a total shrinkage of nearly 600,000 units. The number of cars required to handle a given volume of traffic has been reduced by the installation of larger capacity cars, acceleration of freight schedules, and generally improved operating efficiency of the railroads. The increase in average car productivity affords only a part offset to the decline in total ownership, and further recovery of car loadings towards pre-depression levels would necessitate large additions to the present stock of freight equipment.

* * * *

Protection for Platelayers

A radio device designed to ensure the safety of track-walkers, platelayers, and others working on railway lines, has been invented by a Soviet radio engineer named Pozdniak, employed in the Communications & Signals Service of the Dzerjinsky Railway. The device comprises a transmitter on the locomotive, and a portable receiver. The installation on the locomotive consists of a two-valve low-power ultra-short-wave transmitter which works all the time the train is in motion. It transmits signals which are received at a distance of a mile by the portable single-valve receiver which may be carried by a man on his belt. The receiver weighs no more than 1½ lb. and contains a relay actuated by the signals from the transmitter on the engine. The signal thus given warns him of the approach of the train. It is claimed that the transmitter may also be used for radio-telephonic communication between the driver and the staff at stations and signal boxes, and obviously it could be used by the look-out of a gang working on the track. A radio device for warning permanent way gangs, of somewhat more elaborate design, has been in use for some time on the French railways, and was described and illustrated in *THE RAILWAY GAZETTE* of July 7, 1939, at page 23.

Fluorescent Train Lighting

Electric discharge lamps are in common use for street lighting and in factories, principally on account of their lumen output which is far higher than that of filament lamps of the same current rating. For interiors that require light of a more agreeable colour quality than is obtainable from plain discharge lamps a fluorescent variety of unit has been made available. Like the plain type, it is made to operate on a.c. supplies and requires a relatively high voltage. It has not therefore, until recently, been considered to have application in trains where the supply is a low-voltage d.c. one. Now, however, a special form of fluorescent lamp has been added to the Mazda range of the American General Electric Company to meet railway requirements. It will operate on a 64-volt d.c. supply. Already in use on the New York Central System are tubular units of the new type 15 in. long and 1½ in. in diameter. On a regulated voltage of 60, each unit consumes 22.2 watts and gives out over 500 lumens. Smaller units are also used and in a *de luxe* coach seating 60 passengers the total connected lighting load, including the smaller night lights, is 2,036 watts. The tubular form of lamp lends itself very well to the roof lines in a railway carriage and provides practically shadowless illumination.

* * * *

The Train Order Signal in the U.S.A.

Under the train dispatching system, as very generally practised in America, it is necessary to advise approaching trains when they are required to stop at a station office, or other equivalent point, to take up orders. For many years the so-called "train order" signal—usually a post with an arm for each direction at the same level—has been used for the purpose, and, as a rule, worked quite independently of any other signals at the locality. Much discussion has taken place on the advisability of giving some distant indication in rear and combining the train order signal with others, to simplify the driver's work and eliminate risk of mistake. Some railways have taken steps in this direction. Our American contemporary, *Railway Signaling*, discussing the problem in a recent issue, calls the signal an "essential nuisance." We naturally comment with diffidence on American working conditions, as they necessarily differ a good deal from those we are used to, but we certainly think that an independent train order signal is something hardly to be regarded as satisfactory in these days.

* * * *

Roller Bearing Locomotives

Considerable progress is being made in the equipment of locomotives with roller bearing axleboxes and in addition with needle bearings for motion pins and roller bearing return cranks. The number of cases in which all the wheels of engine and tender are fitted is relatively small but is on the increase, and such objections against the equipment of coupled wheel axleboxes as increased size and weight would seem to be declining as the advantages of hot box elimination and lower maintenance charges emerge more clearly. The higher first cost, naturally not inconsiderable, is to be regarded as capital outlay to reduce loss of locomotive availability and higher maintenance. A noteworthy example of such development is provided by the 40 locomotives recently built in this country for the New Zealand Government Railways, which are completely equipped with roller bearings of the types referred to in the article on p. 736 of our issue last week. The practice of so equipping locomotives, if not *in toto* at least in large part, is not new on this railway system, and from this it must be deduced that the extra cost has been proved to be well worth while.

Emergency Powers (Extension) Act

ADVOCATES of Government control of industry have always recognised that in the transition from private to public direction a period would arise in which matters of compensation and suchlike would have to be arranged, either by agreement, arbitration, or decree. Apart from the lengthy process of making possible by constitutional methods the nationalisation of industry or units of it, it had generally been expected that if it ever came, this period of transition would be both long and critical from the viewpoint of the general scheme. Those who have previously espoused the cause of Government direction of industry, however, had never dreamed of the essential features of the changeover being effected within three hours. Yet that indeed is what happened on May 22 when the Emergency Powers (Extension) Act was placed on the Statute Book with less demur or formality than would have attended the most trivial of Parliamentary business in normal times. We dealt briefly with the passage of the legislation in THE RAILWAY GAZETTE of May 24. The Act itself is extremely brief; few words are needed for the essential purpose of vesting in the Government complete and absolute control over all persons and all property. In effect, from the time of the passage of the Act, all persons and all businesses in the country have been working on Government account, and their occupations, remuneration, and hours of work have been matters entirely at the discretion of the Cabinet.

The willingness with which these far-reaching and revolutionary powers have been ceded has been born of the realisation of the vital need for the maximum degree of unity in direction in order that the national effort may be used to the greatest advantage in meeting the menace which looms outside our very ports. One of the most important immediate effects of the new legislation so far as our heavy industries and all those engaged on essential war work are concerned will no doubt be a greater fluidity in the supply of skilled labour. The need for a greater number or a more mobile force of skilled technicians has recently been felt acutely at many works. The new powers which vest in the Minister of Labour enable him to draft workers, if necessary, so as to ensure the utmost and most economic use of the nation's manpower. That in itself should be of immediate value to many of our great war industries. Still more important, should the war be prolonged, will be the ability to remove men from less essential forms of work and to train them to take their places in others of greater immediate moment. The Government, in fact, is able to direct and make use of the whole vast conglomerate industry of the country as if it represented the various departments of some great unified commercial undertaking of which the board, in this case the Cabinet, may extend or close down sections at will. This has been achieved while yet preserving the exterior semblance of private enterprise and avoiding all the complexities which a more customary form of requisitioning of persons and property would entail.

From the point of view of the railways the Act is important in an especial way, for it gives the Government power unilaterally to set aside the February financial agreement. Whether in fact it will do so it is difficult to judge. There seems to be little doubt that since it is inevitable that the railways will be designated as controlled undertakings—for they are that already—they will rank for Excess Profits Tax at 100 per cent. instead of 60 per cent. as formerly. Since the railway position in relation to E.P.T. is already obscure this does not take one much further forward. If in fact the Government takes advantage of its new powers to over-ride the financial agreement with the railways, it would seem that some

other form of compensation arrangement will ultimately have to be negotiated. There is at least the point in the new powers which may prove some solace to railway proprietors that under them the Minister of Labour will be able to lay down rates of pay and thus put an end to the constant applications for increased wage rates which have characterised the activities of the railway unions of recent months. Since the present agreement is based largely, if not entirely, on principles laid down by the Government itself, it is possible that it will be decided to take no action in this matter, and that the current arrangement will be permitted to continue in being.

It is to the credit of the Government that it has effected this vital change with so little disturbance. There can be no doubt that the step which has been taken opens vast and complicated problems for the future, but these are not times when one can endanger the present by dallying lest one compromises the future. Submission to the peril which threatens the nation at this hour would mean an obliteration of any future to which one might care to look. It may be said with an air of truth that we have surrendered ourselves to an autocracy as complete as that which we are fighting. Rather have we pledged our property and our liberty for the duration of the struggle, confident of our ability to regain them in the future. There is an essential difference between placing ourselves in bond to an administration whose word will be honoured and to becoming subject to one whose every pledge has been violated.

* * * *

Nigerian Government Railway

THE Nigerian Railway is a heavily-graded line rising from the sea coast at Lagos and Port Harcourt to a height of 4,500 ft. and falling again towards the Sahara. Nigeria has a population of over 20,000,000 and its principal exports are groundnuts, cotton, tin, coal, cocoa, and palm oil. The railway depends to a considerable extent for its prosperity on the groundnut crop and the report for the financial year ended March 31, 1939, which we have recently received from Mr. J. H. McEwen, the General Manager, shows that the poor prices actually offering completely upset the calculations based on early advices that the forthcoming groundnut crop was expected to be more than satisfactory. In consequence the revenue derived from the conveyance of ground nuts fell from £1,009,293 in 1937-38 to £684,244 in the year under review and the prevailing trade depression also reduced other merchandise earnings from £1,195,468 to £878,308 and produced a fall of £37,604 in passenger receipts. The gross receipts include £15,161 from road transport, the cost of operating which amounted to £14,133. The operating surplus in 1938-39 represented 3.39 per cent. on capital, compared with 6.45 per cent. in the previous year. A comparison of results for the past two years is made in the accompanying table:—

	1937-38	1938-39
Miles open	1,903	1,903
Passengers	7,356,766	6,707,417
Goods, tons	859,614	676,855
Train-miles	3,847,104	3,315,103
Railway operating ratio	46.81 per cent.	63.00 per cent.
	£	£
Passenger receipts	279,717	242,113
Goods receipts	2,355,368	1,698,676
Gross receipts	2,854,107	2,152,871
Working expenditure	1,343,002	1,360,857
Operating surplus	1,511,105	792,014

Taking into account a full renewals contribution of £430,000, the stipulated interest charges of £764,064, net depreciation and loss on sale and transfer of investments

£51,150, and adjustments amounting to £20,675, there was an excess of expenditure over income of £473,875. In order to raise the price paid to the groundnut producers, the zone rates from northern rail and road stations to Apapa, Baro, and Port Harcourt were reduced by 10 per cent. as from February 11, 1939, and the Conference Lines reduced the ocean rate to 21s. a ton. It was decided that the reduced railway rates should remain in force throughout the 1939-40 groundnut season. These freight reductions are in effect developmental expenditure.

The number of engines repaired shows an appreciable increase on the previous year, due largely to the steps taken to maintain the output and complete the engine repair programme originally envisaged and thus reduce the increasing engine out-of-service percentage. There was also a satisfactory decrease in the number of wagons awaiting repair in workshops. Operating results generally were adversely affected by the low tonnages and consequent poor train loads. Re-sleeping of the entire Port Harcourt—Enugu section has been undertaken at an estimated cost of £262,827. Some 14 miles of this work were completed during the year under review, and considerable improvement in the running over the re-sleepered portions has been experienced.

* * * *

Early Railway Speeds

OUR recent reference to the late Lord Farrer's joint authorship with Mr. Ernest Foxwell of "Express Trains English and Foreign" which was published in 1889, has brought us on loan from Canon Reginald B. Fellows some interesting literature relating to British railway speeds of 1841, 1842, 1883, and 1888, for which we are most grateful. Canon Fellows is one of the greatest living authorities on early train services, and, so far as he is aware, the earliest tabulated statistics of British railway speeds were given in two papers read by Mr. C. R. Weld before the Statistical Society in 1842 and 1843. The tables were taken from the reports of the Railway Department of the Board of Trade and give the average speed exclusive of stops "of lines on which trains travel at the greatest speed." Several railway companies then in existence are not mentioned in the tables, since the average speed of their trains was not high enough to merit inclusion, but a note is added to the table for 1842 stating that "the average speed (exclusive of stoppages) on all the lines is 21½ m.p.h." Separate figures are given for ten companies with speeds ranging from 36 to 25 m.p.h. The best averages in both years were 36 m.p.h. on the Northern & Eastern (later called Eastern Counties) and 33 m.p.h. on the Great Western.

Mr. Foxwell published in 1884 two papers on "Express Trains," defining an "express" as a train of which the average speed, stoppages included, is as high as 40 m.p.h. On this basis he gave the number of "distinct" expresses in Great Britain in 1883 as 409. The year 1888 was notable not only for the first "Race to Edinburgh" but also for a general improvement of train services in the south as well as in the north of Great Britain, and "Express Trains English and Foreign" gives particulars of the runs of that year which attained or exceeded the 40 m.p.h. average. Mr. Foxwell was responsible for the services in Great Britain, Holland, and Belgium, and Lord Farrer for those in the other countries which are dealt with in that book. Mr. Foxwell was also the author of a *Pall Mall Gazette Extra* No. 42 published in September, 1888, under the title of "The Best Trains. Particulars of the Summer Services of 1888 and the Railway Race to Edinburgh." This also includes a chapter on "Foreign Expresses" for the figures relating to which acknowledgment is made

to Mr. T. C. Farrer; a chapter on "The Philosophy of Fast Trains"; and illustrated appendices 1—With "the Wild Nor-Wester" an Artist's Experience; 2—The Railway King (Sir Edward Watkin) on the King of Trains; 3—Photographing Expresses. An Interview with Mr. Cameron Swan; 4—The Central Asian Railway; 5—A Thousand Miles in "The Daily Whizzer"; and 6—The Canadian Pacific Railway.

The intelligent interest in train speeds, both in railway circles and among the travelling public, dates from the beginning of the activities of Messrs. Foxwell and Farrer, and it is not an overstatement to give them credit for inspiring the movement which has resulted in modern high railway speeds in many parts of the world.

* * * *

Fabricated Locomotive Frames

ONE of the most prevalent troubles with present-day locomotive frames is the slackening of bolts and rivets. The strength and security of bolted and riveted joints is based on the assumption that every bolt and rivet is and will remain perfectly tight, but in practice, under the severe conditions of locomotive service this assumption does not hold good, and the alternative methods of fabricating the frame structure by welding or by casting it in one piece have much to commend them. A paper dealing with this subject was contributed to the Institution of Locomotive Engineers, Western Australian branch, by Mr.

F. Mills, of the Locomotive Department of the Western Australian Government Railways. The basis of this paper was a detailed comparison of the framing of a 3 ft. 6 in. gauge 4-8-2 type locomotive assembled by means of bolted and riveted connections, with a similar structure fabricated by arc welding. The author was able to make out a very good case for the welded system on the grounds of economy in several directions. Work in the machine and pattern shops is considerably reduced, there is a substantial reduction in the weight of the completed framing, and a large gross saving is effected on maintenance account. The welded design also scores heavily by removing causes of repair and consequent time out of service.

LETTER TO THE EDITOR

"The Railway Gazette"

10, Brandon Villas,
Bristol, 1, May 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I would like to send you a word of commendation on the adoption of modern type for the matter set out in statistical form. This is now much more easily read and appreciated than before.

Is it too much to hope that your most informative series of articles "Transport Services and the War" will sometime be reprinted as a permanent record in book form?

Yours faithfully,

C. R. CLINKER

PUBLICATIONS RECEIVED

Factory Ventilation in the Black-out.—Published by His Majesty's Stationery Office on behalf of the Factory Department of the Home Office. Obtainable from the Stationery Office, price 3d.—This pamphlet, just published, has for its object the improvement in the ventilation of factories and other premises that were hurriedly blacked out with little thought of adequate ventilation so necessary for the health of the workers, and is also intended as a guide in future building schemes.

Despite the closing of windows and other openings in walls and roofs—sometimes night and day—or the fitting of shutters, normal conditions of ventilation can generally be restored by simple means. It is, however, difficult or impossible to secure this end by natural ventilation, and mechanical ventilation usually has to be provided. Careful study is necessary of the conditions, and the warming of the air supply in cold weather is advisable. Plenum systems can usually be adapted, and consist of a fan and duct system with a heating battery; only a slight positive pressure is required in the fresh air supply. Excessive internal temperatures and humidity must be avoided.

The pamphlet gives illustrations of various light traps at ventilator openings. These consists of cowls and baffle plates, and different arrangements of louvres for sash windows and ventilator openings; inclined baffles for transom windows; and light-trap roof ventilators of various kinds. Light-proof air pump roof cowls, combined fan and

hood, or baffle arrangements are also shown. Emphasis is laid on the necessity for all interior surfaces of light traps, baffles, and louvres to be painted matt black.

Facts about British Railways, 1940. London: Issued by the British Railways Press Office, 2, Caxton Street, Westminster, S.W.1, on behalf of the G.W.R., L.N.E.R., L.M.S.R., and Southern Railway Companies. 6½ in. × 4 in. 32 pp. Gratis.—The facts referred to in the title of this booklet are selected to show the widespread form of the services rendered throughout the twenty-four hours by the railway companies. Sir James Milne, Chairman of the General Managers' Conference, 1940, who contributes a foreword, points out that the facts given also afford some indication of the vast resources which

have been willingly placed at the disposal of the country in order to assist in the successful prosecution of the war. On this occasion, in addition to much of the customary factual and statistical matter bearing more particularly on the civil side of the companies, a special section has been incorporated dealing with the effects of the war on the railways. Details are given of the Government control of the lines, the financial arrangements concluded, the air raid precautions which the companies have undertaken, and the part the systems played in the evacuation of sections of the civilian population. As a direct result of the wartime control of the companies, and the consequent non-publication of a great deal of customary statistical matter, the figures contained in the booklet have not been brought so nearly up to date as usual, but for all practical purposes they are the latest obtainable.

London Fares Increase Hearing

The Consultative Committee to the Ministry of Transport is considering the best means of raising fares in the London area so as to yield an increase of 10 per cent. and is to submit its conclusions to the Minister as soon as possible. At hearings of evidence for and against the proposals of the Railway Executive Committee, held on May 24 and 25, it was stated by Counsel for the committee that, whereas in the twelve months to end June, 1939, receipts from the road services of the London Passenger Trans-

port Board were £23,123,000, it was estimated that for the year to March, 1941, receipts would be £20,528,000. Mr. Frank Pick, former Vice-Chairman of the board, in evidence, expressed the view that to retain the 1d. minimum fare would result in a loss of about £1,000,000 of the proposed increase in income which was based on the introduction of a 1½d. minimum fare. It would not be possible to have 1d. fares for a single stage because of the difficulty of checking the collection of fares.

THE SCRAP HEAP

Trains between Nairobi and Mombasa on the Kenya & Uganda Railways were stopped recently by a plague of caterpillars which spread over the track and prevented the wheels gripping.

* * *

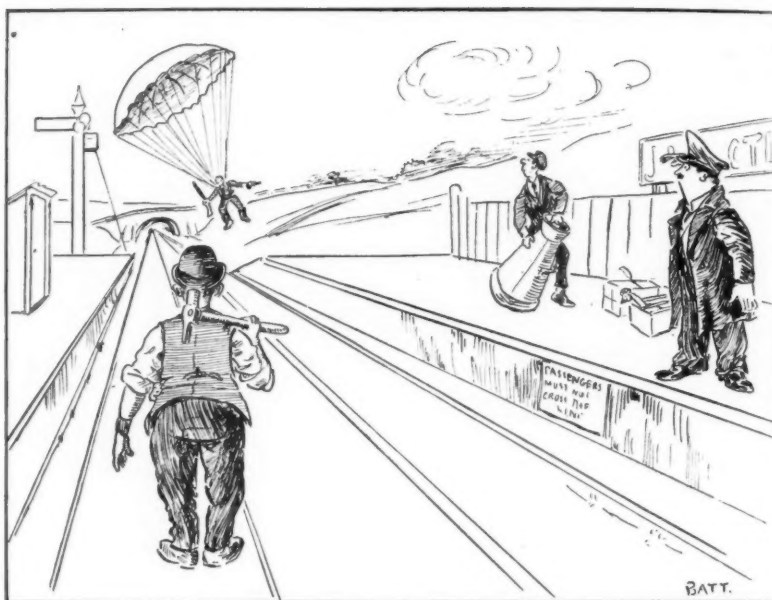
A mother who misrepresented her five-year-old son's age so that he might travel free 20 years ago, has at last "squared" herself with her conscience and the Canadian National Railways by sending the company \$15.

* * *

Huddersfield Corporation & L.M.S.R. Joint Omnibus Committee has loaned two single-deck buses, which have been specially equipped with stage, etc., for use as mobile theatres for giving entertainments to anti-aircraft and other units serving in isolated places.

* * *

The Times of Monday, May 25, 1840, recorded what is described as "a remarkable instance of the utility of railways occurred in connection with the fire at York Minster. An express was sent to Leeds for engines; four were immediately got in readiness and despatched to the scene of devastation. The distance to be traversed was 48 miles. This was accomplished, and the engines playing upon the fire, in the small space of an hour and 40 minutes." The fire, which broke out on the night of May 20, was reported, necessarily in a somewhat scrappy form, in *The Times*



Another joy added to the life of the Railwayman

(Reproduced by courtesy of "The Railway Review")

of May 22 and 23. "It may be remarked," said the *York Courant*, quoted in the second of these issues, "that the very tower in which Jonathan Martin made his first attempt to destroy the Minster on the night of the 2d of February, 1829, but which he could not accomplish, is the one in which the present direful calamity commenced."

In a preface to a new French book *Du Senegal au Cameroun par les Confins Libyens*, written by Colonel d'Annelet, General Gamelin advocates the building of a trans-African railway from north to south via the Belgian Congo, and says: "Certainly today we have the aeroplane, but must it kill the railway, which itself has not killed the road?"

THE EMPIRE'S STRENGTH

DO YOU KNOW THAT
AUSTRALIA

is the world's greatest exporter of wool, and also supplies wheat, meat, dairy products, fruit and valuable metals: that aircraft and munitions are now being mass-produced in Australia.

THESE ARE THE SINEWS OF WAR

THE EMPIRE'S STRENGTH

DO YOU KNOW THAT
NEW ZEALAND

produces six times as much butter to-day as during the last war and twice as much cheese: that wool, meat and fruit are also exported in very large quantities.

THESE ARE THE SINEWS OF WAR

THE EMPIRE'S STRENGTH

DO YOU KNOW THAT
CANADA

besides growing millions of acres of wheat has great mineral wealth: that 90% of the world's nickel is mined in Canada: that Canadian mass production of aeroplanes and munitions is in full swing.

THESE ARE THE SINEWS OF WAR

Three of a series of six posters in "The Empire's Strength" series, which have been designed by the Ministry of Information primarily for distribution in the United Kingdom to portray the contribution of the Dominions and the Colonies, and the part which the Empire is playing in the national effort. The first three posters were reproduced on page 731 of our May 24 issue

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

ARGENTINA

Half-yearly Railway Returns

According to the railway returns for the first six months of the present financial year issued by the *Instituto de Estudios Económicos del Transporte*, the total receipts of all the lines, both State and privately-owned, showed an increase of \$6,046,000 paper, or 2.6 per cent., over those of the corresponding period of 1938-39. This slight improvement is entirely due to augmented goods traffic, as owing to the shorter distances travelled and the lower fares in force, passenger receipts per km., despite an increase in the total number carried, actually showed a reduction. The appended tables give the comparative figures:—

ALL RAILWAYS: RESULTS

	First Six Months		Incr. or Decr.	Percentage
	1938-39	1939-40		
Goods—				
Tons	21,075,000	22,340,000	+ 1,265,000	+ 6.0
Ton-km.	5,981,041,000	6,288,501,000	+ 307,460,000	+ 5.1
Passengers—				
Number	82,245,000	83,537,000	+ 1,292,000	+ 1.6
Pass.-km.	2,130,020,000	2,139,257,000	+ 9,237,000	+ 0.4
Receipts (pesos)				
Goods	165,390,000	172,583,000	+ 7,193,000	+ 4.3
Passengers	45,960,000	45,584,000	- 376,000	- 0.8
Miscellaneous	22,843,000	22,072,000	- 771,000	- 3.4
Total receipts (paper pesos)	234,193,000	240,239,000	+ 6,046,000	+ 2.6

SEPARATE RAILWAYS: GROSS RECEIPTS IN \$ (PAPER)

	First Six Months		Incr. or Decr.	Percentage
	1938-39	1939-40		
B.A.G.S. and subsidiary lines	55,198,000	54,307,000	- 891,000	- 1.6
Central Argentine	48,425,000	51,808,000	+ 3,383,000	+ 7.0
B.A. & Pacific	32,133,000	32,279,000	+ 146,000	+ 0.5
B.A. & Western	17,923,000	19,442,000	+ 1,519,000	+ 8.5
Entre Rios	7,029,000	6,889,000	- 140,000	- 2.0
Argentine N.E.	4,586,000	4,465,000	- 121,000	- 2.6
Total receipts of British companies	165,294,000	169,190,000	+ 3,896,000	+ 2.4
Santa Fé Provincial	7,299,000	8,051,000	+ 752,000	+ 10.3
Compañía General	5,375,000	5,903,000	+ 528,000	+ 9.8
C. Buenos Aires	3,033,000	2,831,000	- 202,000	- 6.7
Ros. Pto. Belgrano	2,239,000	2,322,000	+ 83,000	+ 3.7
Total receipts of private companies	183,240,000	188,297,000	+ 5,057,000	+ 2.8
State Railways	50,953,000	51,942,000	+ 989,000	+ 1.9
Grand total for all railways	234,193,000	240,239,000	+ 6,046,000	+ 2.6

Heavy Maize Crop Expected

The first official forecast issued by the Ministry of Agriculture estimates the probable production of maize at 11,028,000 tons. This figure is over six million tons more than the previous year's crop, and the highest ever recorded except that for 1934-35, when the total production amounted to 11,480,000 tons.

Exportable Maize Surplus

The Ministry of Agriculture estimates the surplus available for export at 8,390,000 tons, although in local trade circles this figure is considered unduly high, in view of the low yields expected in certain districts. But even if this estimate should eventually prove

to be excessive, the marketing of such an enormous surplus is likely to be a serious problem, owing to the situation created by over-production coupled with low prices; a further complication is the difficulty of transporting the grain to European ports under wartime conditions of chartering.

The Argentine Government has launched a vigorous propaganda campaign with a view to increasing the home consumption of maize for both food and fodder, and the railways—as already reported in these columns—have been asked to co-operate by granting rebates in the maize tariffs as well as in a general scheme of distribution. The Government declined to accede to the request of the growers for a minimum price, and instead have

decided to grant cash loans to those agriculturists in need of financial aid, thus relieving them of the necessity of disposing of their grain as soon as it is fit for transportation, and so causing an avalanche of selling under unfavourable market conditions.

Record Rice Crop

Rice production has made tremendous strides in Argentina during the last few years, and the cultivation of this cereal will soon have to be reckoned amongst the country's most important agricultural industries, more particularly in the Provinces of Tucumán and Corrientes, where the climatic conditions are favourable to its growth. This year's production is estimated at

110,500 tons, an increase of 9,568 tons over that of last year, and nearly 60,000 tons more than the average for the last five years.

Institution of Locomotive Engineers

The first quarterly meeting of the 1940 session of the South American Centre was held in Buenos Aires on April 12, when a paper on "Industrial Standardisation with Particular Reference to the Argentine Republic," by Mr. Eric Woodbridge, was read and discussed. Mr. J. Mailer, Chief Mechanical Engineer, B.A.G.S. and B.A. Western Railways, Vice-Chairman of the Centre, presided. In the afternoon the members made a tour of the locomotive workshops at Liniers, by the courtesy of Major O. Loewenthal, General Manager of the B.A.G.S. and B.A.W.R., and later visited the central laboratory of the British-Argentine Railway Committee at Buenos Aires.

UNITED STATES

New Rolling Stock on Class I Lines

The Association of American Railroads reports that in the first three months of 1940, Class I railways placed in service 20,253 new freight cars, the largest number installed in any corresponding period since 1930, and an increase of 15,149 on the first quarter of 1939, and of 15,891 on the first quarter of 1938. In the same period the number of new steam locomotives put into service was 16, compared with 8 in the first quarter of 1939, and 68 in the same period in 1938. New electric and diesel locomotives totalled 63 compared with 46 in the same period last year, and 40 in the same months two years ago.

Class I railways had 21,112 new freight cars on order on April 1, compared with 6,502 on the same day last year, and 5,825 on the same day in 1938. New steam locomotives on order on April 1 totalled 59, compared with 62 on April 1, 1939, and 84 on April 1, 1938. New electric and diesel locomotives on order on April 1 this year totalled 56 compared with 33 last year, and 19 two years ago. Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

New Hopper Cars for the Nickel Plate Road

Delivery has recently taken place of 50 70-ton covered hopper cars, built by the American Car & Foundry Company for the New York, Chicago & St. Louis, or Nickel Plate Railroad. They are intended for the carriage in bulk of either heavy commodities or light materials such as wood flour, fuller's earth, cement, or soda ash, requiring protection from the elements. Each car is fitted with eight roof hatches, four on each side, which can be locked simultaneously by locking bars extending the full length of the car, and having sufficient spring to insure water-tightness.

All joints inside the cars in contact with the load are welded to secure not only lightness, but also smooth surfaces, offering no resistance to the outflow of the material when discharging. Consequently their 1,958 cu. ft. of contents can be discharged in 22 min. Syntron electric vibrators vibrating against the hopper sheets, prevent any tendency in such material as cement to arch, and secure a steady downward flow.

Enterprise cast steel frames and gates are welded into the hopper outlets, and the bodies are stiffened against tendency to buckle by a transverse bulkhead between the two hoppers in each car, and by pressed steel ribs. The leading dimensions are:—

Length over couplers	35 ft. 2½ in.
Overall width	10 ft. 1½ in.
“ height	12 ft. 9½ in.
Capacity	1,958 cu. ft.
Tare weight	25 tons 16 cwt.
Load limit	79 tons 4 cwt.
Ratio of weight to load	3.07
“ revenue load to gross weight	75.5

Four-wheel Buckeye bogies are fitted and have Carnegie-Illinois two-wear steel wheels with 8-in. × 11-in. journals.

New Pullman “Coach-Sleepers”

The two experimental Pullman convertible day coach-sleeping cars, briefly described on page 599 in our issue of April 26 last, are to be placed in service in June to run over various railways in different parts of the United States.

Each car has a side gangway and ten seating and sleeping sections, five of them having accommodation for six and the other five for three passengers in each, by day and by night. The daytime accommodation is comparable with the best *de luxe* coach comfort, provided by three seats adjustable as to height and as to the slopes of their backs to suit all passengers. Individual foot rests and folding arm rests complete the comfort of the individual.

At night curtains can be drawn to separate the sleeping sections from the

side gangway, and when the middle of the three berths in each tier is lowered to the sleeping position, it forms a partition between the sections. In effect, therefore, the car is converted into a side corridor 10-compartment vehicle at night. In each tier the seat back forms the lower berth, but the top berth is fixed, remaining in position by day, its under side being above the head of even a tall passenger. The middle berth is raised against the top one in daytime, and, with the compartment partition mentioned above, lets down to a position midway between the other two berths for night use.

Each berth has individual curtains as in the old Pullman sleepers, and the upper berths can be reached by a ladder without disturbing the lower passenger. A toilet basin, folding against the outside wall of the car when not in use, together with mirror, hot and cold water, shaving and other conveniences, lit by special lighting, is provided in each compartment, but there are also wash rooms and lavatories for men and women separately at opposite ends of each car. A baggage compartment and folding seats along the gangway are also included. The cars are air conditioned, and each berth has an individually-controllable fresh air inlet. There are lights for each seat, and each berth also has a reading lamp. The general layout, equipment, and furnishing are shown in the accompanying illustrations, for which we are indebted to our contemporary, the *Railway Age*.

COLOMBIA

American Rolling Stock for Colombian Railways

According to telegraphic advices received through official sources at Washington, the greater part of the loan of \$5,000,000 U.S. dollars, recently obtained by the Government of Colombia,

will probably be invested in the purchase of railway equipment in the U.S.A. to an estimated value of \$4,500,000 U.S. The material in question will include 36 railcars and 12 wagons.

INDIA

Locomotive Manufacture in India

It is understood that the Government of India has finally decided that the manufacture of locomotives in India should be taken up as a State enterprise. The scheme of manufacture contemplates the use of Indian materials to the maximum extent, and a detailed investigation is proceeding to ascertain with precision what materials have to be imported. Locomotive parts include many patented designs, and the comparative cost of obtaining such parts from abroad and of manufacturing them, if possible, on the payment of royalties to the patentees will, doubtless, be considered.

CEYLON

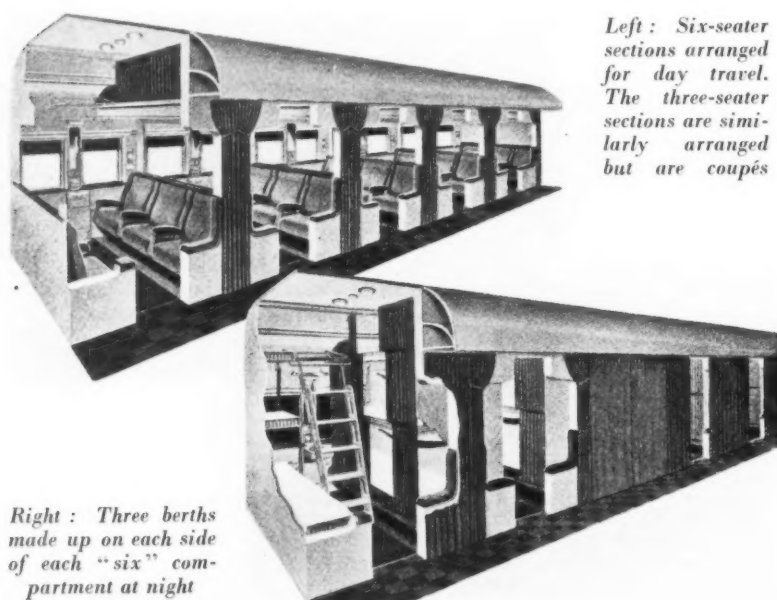
Firewood for Coal

Wood fuel is now being used in place of coal in the locomotives on the Jaffna and Batticaloa sections. This change has, incidentally, given rise to a new branch of industry providing employment for a fairly large number of people. The more extensive use of firewood by the railway is said to be due not to any shortage of coal but to a new policy of assisting a local enterprise, which is so closely connected with the sleeper industry also. The burning of firewood in the locomotives has necessitated the opening up of stacking grounds at the intermediate stations, as even when the tenders are packed with firewood, fresh stocks have to be provided at shorter distances than in the case of coal.

CHINA

Chinese Create Havoc on Japanese Troop trains

Chinese guerrilla and regular troops continue to give the Japanese no peace on the railways in Japanese hands. On one day in March, it is reported, well over 700 Japanese soldiers were killed or injured in Chinese attacks on troop trains. On the Lung-Hai Railway, they ambushed a west-bound train, raking it with a heavy fire. To escape destruction the train accelerated and travelling at high speed crashed into another train at the East station at Hsuehchow with great loss of life. On the Tientsin-Pukow Railway also, another troop train was completely wrecked by the Chinese, and 500 Japanese soldiers were, it is reported, killed or injured. In the course of the same day a south-bound troop train on the Tatung-Poochow Railway was mined near Wenhsi, with a reported loss of 200 killed. The actual numbers of casualties may be exaggerated, but there can be little doubt that much damage and loss of life was and is frequently being caused, by the Chinese.



Left: Six-seater sections arranged for day travel. The three-seater sections are similarly arranged but are coupés

Right: Three berths made up on each side of each "six" compartment at night

SIGNALLING IMPROVEMENTS IN ALSACE - LORRAINE

Signalling changes and improvements made on the Alsace-Lorraine lines of France in recent years include axle counting in a long tunnel

WITH the transfer to French management of the Alsace-Lorraine Railways in 1918 a number of signalling and operating problems called for special consideration. The Central European system of working, with the use of trailable points and point indicators, was fundamentally different from that long standard on the French railways, and, whatever its merits or otherwise, had necessarily to be retained for a considerable time, if only on the score of economy, as any radical change would have been very costly. In some respects the signalling was in advance of the French arrangements, all running stop signals being semaphores and lock-and-block universal, while the green light had for some years been used as the "clear" indication. Although many stations had quite modern, well-constructed equipment there were others where the locking frames were very old, while there were many more signal boxes than were strictly necessary. Little change in practice was made for some years, but from 1929 onwards, under the supervision of Monsieur W. Lienhard, Ingénieur Principal, Signal & Electrical Superintendent, much new work was done, incorporating track circuiting and certain principles taken from the practice of the other French lines, including cab signalling. New electric power boxes were installed between 1935 and 1937 at Sarreguemines (3 boxes, 280 levers); Mulhouse (3 boxes, 320 levers); Lutterbach (1 frame, 20 levers, in stationmaster's office: see THE RAILWAY GAZETTE for February 19, 1937, page 321); and Reding (2 boxes, 240 levers). Except at Lutterbach the individual lever system was followed, no doubt owing to the prevailing methods of shunting there, but the large new installation at Strasbourg (2 boxes, with 170 levers) the route setting system has been adopted. (One of the new frames for this station was illustrated in THE RAILWAY GAZETTE for September 1, 1939, pages 323 and 324.) Shunting is to be fully signalled in this case. Another route lever frame of 70 levers has been ordered for Luxembourg. Automatic operation of intermediate block posts (there were never many of these on the Alsace-Lorraine lines) has been adopted for the Mulhouse-Belfort line and a single line block, using direction levers and track circuit, installed between Lutterbach and Graffenwald.

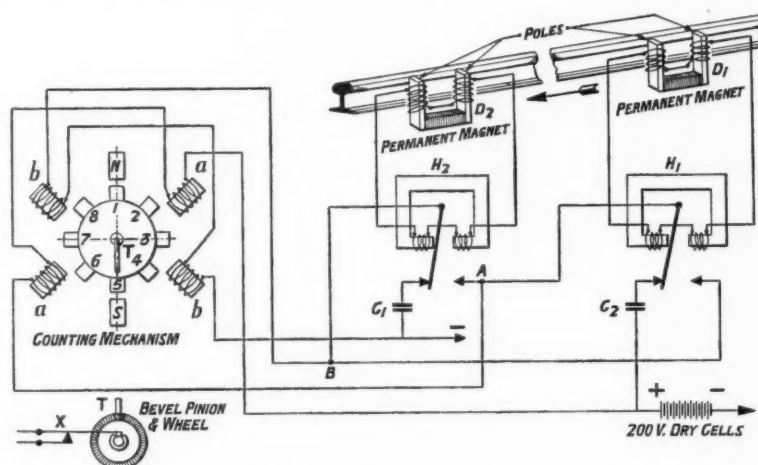
The Axle Counting Block Apparatus

The tunnel between Ste Marie-aux-Mines and Lusse, on the line to St. Dié, is 7 km. (4.35 miles) long and has at present a single track only, so that some form of single line block was essential to control the traffic safely. Track circuit control would, of course, have provided the necessary security but would have involved joints, relays, etc., at locations in the tunnel, which was considered undesirable. The Swiss Federal Railways had for some time made use of axle counters, worked by wheel actuated treadles, in the Hauenstein, Simplon, Olten, and other

tunnels, and the German railways had tried similar devices. The Alsace-Lorraine lines also conducted experiments and, after trials of the inductive A.T.C. described in THE RAILWAY GAZETTE for November 11, 1938, page 826, decided to apply the principles of induction to the axle, or wheel, counting problem. Experiments were successfully effected at high speeds from 1937 onwards at Vendenheim, where there is a heavy traffic.

The Apparatus Used

The "treadle," or wheel detecting, device consists essentially of a watertight case attached to the rail con-



Diagrammatic arrangement of treadle or wheel counting device used on the Alsace-Lorraine section of the French National Railways

taining a powerful permanent magnet, on the extension poles of which coils are placed, the whole being mounted in such a position that the tyre of a wheel, in passing, modifies the reluctance of the magnet, producing an inductive effect in the coils, the current so produced being used to actuate relays and, through them, the counting mechanism. The arrangement is shown diagrammatically above. The two inductor treadles, D1 and D2, are shown to actuate the one counting mechanism in opposite directions, but, where the section is shorter than the longest train, each treadle operates its own counter, the relative positions of the two indicating the condition of the section.

The counting mechanism consists of an 8-pole rotor moving inside a 6-pole stator and turning a shaft T, the latter gearing with another shaft carrying a cam, arranged to open the signal control circuit contact X immediately the rotor leaves the normal position. Two of the stator poles, N, S, are poles of a permanent magnet, and serve to hold the rotor stationary when required, the other four being electro-magnets. This device is, of course, already known for other purposes in electrical engineering. The relays H1 and H2 are polarised and their armatures normally occupy the position shown. A voltage of about 200 is necessary to ensure efficient working, but, the current consumption being very small, dry cells

may be used. No current is consumed when the apparatus is not being actuated.

Assuming a train to be travelling from right to left in the figure, and a wheel to pass into the field of the inductor treadle D1, the current so induced reverses the armature of H1. Current then passes from the battery *via* poles *a a* of the counter to the connecting point A, thence *via* the armature of H1 reversed to the point B, where it divides, passing partly *via* poles *b b* and into condenser C1, which for the moment practically absorbs all the impulse and becomes charged. The strong effect produced in poles *a a* overcomes the action of the magnet N S and the rotor moves so that its poles 2, 6, come opposite those poles.

On the cessation of the impulse produced by the treadle, relay H1 returns to normal, and poles *a a* are no longer energised, but condenser C1 now discharges through poles *b b* and the rotor turns further, until its poles 3 and 7 are opposite to them. When the discharge ceases the effect of the permanent poles N S reasserts itself and poles 4 and 8 move opposite to them, so that the passage of a wheel results in the rotor making $\frac{1}{2}$ revolution. Each wheel of the train acts in a similar manner. The second inductor treadle D2 and its relay H2 are so connected as to turn the rotor in the opposite direction until, on the passage of the same number of wheels, the normal condition of the counter is re-established.

The trials at Vendenheim showed that the current induced by a passing wheel varied from 2 to 15 m.a. (the

resistance of the circuit being about 300 ohms) according to the speed of the train and the lateral play of the axles. The air gap between inductor poles and the rail head was fixed at 55 mm. (2.16 in.). The brake shoes of certain railcars produced an induced current up to 1.5 m.a. so that the relays had to be adjusted to work positively at 2 m.a. but not at 1.5 m.a.; this did not prove satisfactory in practice. In any case the sensitiveness of the treadles was so great that a platelayer could work them by allowing a spanner to pass between poles and rail. It was therefore decided to use an inductor on each rail, exactly opposite one another and this has been done in the Ste Marie-aux-Mines tunnel with successful results. Compensation is in this way provided for the lateral play of the wheels and a minimum impulse of 5 m.a. is obtained, the relays being set to operate at 2.4 and release at 1.1 m.a. The brake shoes of the railcars do not interfere with the working, nor with the wrong use of a spanner.

Notwithstanding the long line circuits necessary for the controls the tunnel installation has given complete satisfaction, counting of the bogies of the Bugatti railcars (wheelbase 0.9 m. or 2 ft. 11 in.) being effected at speeds up to 140 km.p.h. (87 m.p.h.). The above notes are taken from an article in the *Revue Générale des Chemins de fer* for January and February, 1940, by Monsieur Lang, Assistant Manager of the South-Eastern Region of the French National Railways. The apparatus was constructed by the Société Parisienne-Metrum of Paris.

CHALK FALLS BETWEEN FOLKESTONE AND DOVER

Some further notes on the blocking of the Southern Railway line between Folkestone and Dover during the winter of 1939-40

THE Shakespeare Cliff fall of November 28, 1939, has already been described and illustrated in THE RAILWAY GAZETTE of March 1, 1940, pages 295-7. The line was re-opened to traffic after this fall on Sunday, January 7, but, owing to the complete saturation of the chalk of the cliffs and the capping beds and pockets of loam by the heavy rains of the past winter, and also on account of the disintegrating effect of the subsequent severe frosts and snow, numerous lumps of chalk and quantities of flints began to detach themselves from the cliff when the thaw became pronounced, and continued to fall on the railway. By February 5, this continuous fall of fragments as the cliff thawed out between Abbotscliff and Shakespeare tunnels had reached such a volume that it became necessary to close the line to traffic on that evening, so that loose chalk and beds of flints could be removed from the cliff face and the line made safe. The line was re-opened for traffic on February 8 for running trains during the daytime only, and arrangements were made by the Engineer's Department for a thorough inspection of the line every morning before any trains were allowed over it. Chalk and flints continued to fall, however, and the railway had to be watched constantly and kept free from obstruction.

The most persistent falls were from the top of the cliff just outside the eastern end of Abbotscliff tunnel, and at 5.20 p.m. on February 24 there was a fall of about 10,000 tons of loam and chalk from the upper part of the high cliff at this point. The cliffs are about 450 ft. high, and the momentum acquired by the falling mass resulted in the complete destruction of both up and down tracks and a considerable length of the top part of the high sea wall which here protects the railway. The tracks were swept off the embankment and left hanging down over the sea wall, and the embankment remained covered with

chalk to a depth of between 10 ft. to 15 ft. over a length of about 200 ft.

Arrangements were made immediately for the excavator which was then at Shakespeare sidings to be taken to the site, and a second one was brought from Folkestone Junction to work at the other end of the fall. Burning plant and pneumatic drills were also sent to the site to facilitate the removal of distorted parts of the track and to assist in breaking up those blocks of chalk which were too large to be picked up by the excavators.

At about 11 a.m. on February 23, approximately 1,000 tons of chalk fell from the top of the highest part of the high cliff in Folkestone Warren between Martello tunnel and the Warren halt, and between 11 a.m. on Saturday, February 24, and the next morning, there was a further and much larger fall of chalk, estimated at over 100,000 tons, from the same point. As, however, the cliff face at this point was about 250 yd. back from the line and there was a depression between these points, none of the debris came anywhere near the track.

On March 10, running of trains was resumed during daylight only, and on Sunday, April 21, when it was considered safe to do so, the line was opened for continuous traffic. Repairs to the sea wall at Abbotscliff are in hand.

WAR RISKS INSURANCE.—An Order in Council amending the War Risks Insurance Act, 1939, came into operation on May 23. The principal effect is to make insurable under Part II of the War Risks Insurance Act goods which are supplied under contracts for work, labour, and materials. After June 3 insurance of these goods will be compulsory. Compulsion will apply only when the value of all insurable goods owned in the United Kingdom by a seller or supplier exceeds £1,000.

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

A Minister for Petroleum

IN the reshuffle of offices after the succession of Mr. Winston Churchill to the Premiership, opportunity was taken to give official recognition to the increasingly important function of the Petroleum Department of the Board of Trade. Hitherto the work of that section of the board has been grouped with the Mines Department and has fallen under the general administration of the Secretary for Mines. Under the new arrangement, Mr. Geoffrey Lloyd will continue to act as Secretary for Petroleum, and Mr. David Rhys Grenfell has been appointed Secretary for Mines. Mr. Lloyd will deal with all matters relating to the oil industry and petroleum supplies and will be able to give his full attention to the many problems peculiar to the war period which arise in relation to that commodity. For a considerable time there has been a feeling that the oil industry in this country is of too great importance to permit of its being treated merely as a part of another fuel department. In his present capacity Mr. Lloyd will be in a position to deal with the several lines of development of the British oil industry which have recently been the subject of investigation.

"Petrol"

THOSE who speak the English—as distinct from the American—version of our language, so commonly accept the word petrol as the generic term for the spirit used by enormous numbers of road motors, aircraft, and so forth, that it is apt to be forgotten that the word had its originators. Far from wishing to invent a common word, they were devising a distinctive trade name for themselves, and, for as long as the law afforded protection, they made every attempt to discourage general use. In 1892, four years before the passing of the Act which legalised the use of motor vehicles on public highways in Great Britain, the firm of Carless, Capel & Leonard was manufacturing—for use in Daimler engines, which were then being employed in this country mainly to provide power for launches—"a doubly distilled deodorised spirit of 700 specific gravity derived from petroleum." To this product, no doubt after much proposal and counter-proposal, the partners gave the distinctive name of *Petrol*, the suggestion of William John Leonard who, with his brother Charles Hare Leonard, then controlled the business. We are reminded by a recent article in *The Ford Times* that, in 1906, Carless, Capel & Leonard published a substantial booklet with the title "*Petrol: What Petrol Is, Where it May be Obtained, and Other Information Useful to Automobilists*," with the warning note that the word should not be applied to any other make of motor spirit. The booklet recorded proudly that the firm had been awarded a medal by the Automobile Club of Great Britain and Ireland (now the Royal Automobile Club) at the Richmond Show of 1899, and that *Petrol* was used by most of those taking part in the 1,000-mile run of 1900, including the winner of the first prize. At the period this book was produced the motorist obtained his *Petrol* in 2-gal. round cans, or in steel casks of about 50-gal. capacity. It is difficult today to realise that little more than three decades separate the present vast motor spirit industry, with its almost incalculable potentialities

in war and peace, from those pioneer days when petrol was *Petrol*.

Ancillary Road Services in Holland

WE published on page 506 of our April 5 issue a brief article describing the successful co-operation between the Netherlands Railways and old-established road transport concerns and also local carriers. This is but one example of the broad-minded attitude of these railways towards associated undertakings. In fact their policy for some time past has been to discontinue all business not directly concerned with rail transport, or to transfer it to associate organisations or contractors. They have gone further than the railways of other countries in this respect, for the collection and delivery of goods at all stations has been in the hands of an associate road transport company for some years now. At the time of the German invasion of the Netherlands, on May 10, a further step was being taken in handing over to this company also the handling of goods in arrival and departure sheds; only transshipment at junctions and in transfer sheds remained under the care of the railway staff. This new measure, which was taken with hopes of some reduction in operating costs and operating deficits, was viewed with apprehension by the railway staffs, who feared still further reductions in their ranks. All immediate importance has been taken from the matter, of course, by the tragic German occupation of this sadly-ravished country.

Trams: Buses: Trolleybuses

ONE of the few large urban road transport operators with lengthy experience of trams, buses, and trolleybuses, is the Chicago Surface Lines. The organisation has had ten years of experience with trolleybuses, thirteen with petrol-engined motorbuses, and very much longer with electrically-operated tramcars. Concerning the respective merits of the three forms of street transport, the administration holds the view that no one type of unit meets all needs, even in one locality, with the possible exception of a small town, and that standardisation in many cases is the result of the blind acceptance of some slogan or catch phrase. Obviously, if operating costs on a given route were the only consideration, a particular form of motive power and size and type of vehicle would emerge clearly from a study of the conditions, but need for interchangeability of units between one route and another, wide variations in traffic density from day to day and from hour to hour, and desire to simplify maintenance and overhaul methods, have all tended towards standardisation in one fleet. The contrary experience of the Chicago Surface Lines is therefore of particular interest. Its definition of the respective functions of the three units of street transport are:—

Tramcars: Where traffic is heaviest, and streets are crowded with vehicles of all kinds.

Motorbuses: Where the traffic is lightest, and for lines on boulevards and through public parks.

Trolleybuses: Where traffic is of intermediate density, but substantial in amount.

The undertaking opened its first two trolleybus routes (19 miles in total length) on April 17, 1930, and during the next nine months increased this route mileage to the

present total of 49 route miles. The fleet has been increased from time to time until now it totals 152 single-deck trolleybuses, all of 40-passenger capacity, housed in the open. They carry 2.58 per cent. of the total passengers of the undertaking, and constitute 3.83 per cent. of the total of 3,971 vehicles in the fleet; the balance comprises 160 petrol buses and 3,659 tramcars. Incidentally, all the trolleybus routes are feeder services in the north-west section of the city, a residential district developed in the past 20 years, and were built in lieu of tramway extensions.

Co-ordinated Rail-Road Achievement

THE Southern Pacific Railroad and its road subsidiary, the Pacific Motor Trucking Company, have recently demonstrated the value of rail-road co-ordination in the mass movement of passengers and freight. By this means it was possible to undertake the removal from San Francisco to Los Angeles of the California State Relief Department. The move involved several hundred employees and more than 500,000 lb. of office equipment and miscellaneous freight. The service provided, included packing and collecting at the San Francisco office, and delivery, unpacking, and setting in place of the equipment at the new office in Los Angeles in accordance with plans. The Southern Pacific answered a call for tenders open to railroads and road transport undertakings and its bid, which included over-all cost and guarantees of performance, was the lowest of any put in. In subsequent negotiations it was shown that rail service was the only form of transport on which the State could rely to carry out a promise to collect the equipment at San Francisco at 6 p.m. on Thursday and have the Los Angeles office ready for work on the following Monday. In fact delivery operations were completed by 11 a.m. on the Sunday.

Swiss Railway Tunnel for Road Traffic

AT the upper end of the lake of Wallen the line of the Swiss Federal Railways passed through a tunnel some 150 m. (492 ft.) long, cut through a jutting piece of rock called the Bommerstein, and built in 1856-58. For reasons of cost the line in the immediate vicinity was laid in sharp reverse curves, and in recent years these have prevented train speeds being improved. When the new road along the lake was planned, it was found impossible to give both it and the railway a convenient straight route without filling in along the shore at considerable expense. It was accordingly decided to make over the present railway route to the road authorities for a length of 1 km. (3,280 ft.), including the old tunnel, and to build a new railway tunnel through the Bommerstein, further inland. The work was begun in June, 1939, and the tunnel heading completed through in October. The completed work, which will be 454 m. (1,490 ft.) long, will be built for a double railway line, but at first only a single line will be laid. It is expected that electric trains will be running by August next. The cost of the work is given as fr. 1,460,000.

The Harrisburg—Pittsburgh Super-Highway

WE have already described and illustrated certain features of the Harrisburg—Pittsburgh express highway, U.S.A., which is being constructed on the abandoned formation of the partly-completed South Pennsylvania Railroad, in the Road Transport Sections of our issues of September 24, 1937, and September 22, 1939. This important work has resolved itself into a race against time, as it must be "substantially completed" by June 29 next to qualify under the terms of the Federal grant. If, as now expected, this condition is fulfilled and the highway is opened for traffic early in July, it will have created

"a record for high-speed construction of high-speed highways," to quote our contemporary, the *Scientific American*. To achieve so remarkable a distinction, 27 contractors are engaged upon the 160 odd miles of roadway, and are using the most modern equipment, much of it in the form of pneumatic tyred earth-movers and other machines. Some of the tyres used are eight feet in diameter, and all the 300 or 400 machines are fast-moving vehicles. In addition to the tunnelling and the enlargement of the railway tunnels, formerly described, the major works include 114 bridges and several viaducts, the largest of which is the 600-ft. Stanton viaduct spanning a valley 1,400 ft. deep, and crossing two highways, a railway, and a creek. When completed this road will be the pioneer of a great national network of super-highways to be built for the commercial, military, and pleasure needs of the country. It is understood that the official opening ceremony will be performed by President Roosevelt at Harrisburg on July 4.

Snow Clearing on Road to Kashmir

AN important decision has been made by the Kashmir Government to keep the more direct India—Kashmir road open throughout the cold weather by means of tractors and a snow plough. There is heavy lorry and passenger traffic of an almost international kind to and from Kashmir, both by this road and by the Rawalpindi—Murree—Kashmir road, and for through passenger traffic inclusive road and rail tickets are issued from centres such as Bombay and Delhi to Srinagar, the capital of Kashmir State, a gateway to Central Asia. The more direct road passes over the Banihal Pass, about 9,000 ft. above sea level, and is subject to blockage by heavy snowfalls. The Kashmir Durbar has already purchased a tractor costing Rs. 15,000, a snow plough costing Rs. 17,000, and a grader costing Rs. 8,000, and has placed an order for a second (Rs. 16,000) tractor, for keeping the road clear in winter. It is estimated that this equipment will clear a foot of snow over a ten-mile stretch of road in a day at a cost of Rs. 30 Rs. 40, whereas the cost of clearing it by coolie labour is about Rs. 1,000. Also the plough will work in deeper snow than coolies can combat efficiently. The North Western Railway has an out-agency at Srinagar and a working arrangement with one or more road transport concerns for this through traffic over hundreds of miles of mountain highway. Both roads are fine examples of engineering and are well graded and maintained.

Unusual Under-River Subway Construction

ONE of the tunnels now being built beneath the Chicago River to carry the new subway described on pages 772-773 embodies a modern type of construction in that the tunnel sections are pre-fabricated, towed to the site, and sunk in a dredged trench in the river bed, where they are eventually connected with the land sections of the tunnel through temporary cofferdams. A similar method of construction was being adopted for the tunnel beneath the River Meuse to connect the north and south sections of Rotterdam. Whereas in Chicago the tunnel is to take a double line of underground railway, that at Rotterdam is designed for two lines of vehicular traffic and a pedestrian and a cyclist track, the whole contained in a reinforced concrete section 25 m. (82 ft.) wide by 8.5 m. (28 ft.) deep, and of a total length under the river of 584 m. (638 yd.), divided into 61-metre lengths. As in the Chicago tunnel, the lengths are sealed at each end by a bulkhead until joined *in situ* to the next length and finally to the cofferdams beneath each bank. The work at Rotterdam was begun early in 1937 and was already well advanced at the time of the German invasion.

Road Transport and the War—9

Road vehicle registration figures for three months—Women conductors—A.R.P. headlamp mask protection—The Petroleum Board and increased fuel prices—Alternative fuels

The figures of road vehicle registrations which are compiled by the Ministry of Transport show that in April the general trend of recent months was continued. In comparison with April, 1939, there were heavy declines in the registrations of all groups of vehicles except tractors and agricultural engines of the 5s. class. In all, registrations at 12,351 were less than one-third of the 38,897 of April, 1939, and compared with 14,590 in March last. Cars taxed by horsepower declined to 4,688 against 25,645 in April, 1939, and 6,611 in March last. Goods vehicles numbered only 1,945 compared with 4,519 a year before and with 2,909 a month earlier. Details of the April statistics are appended, with comparative figures for previous months of this and last year:

ROAD VEHICLES: NEW REGISTRATIONS

Description	Feb., 1939	Feb., 1940	Mar., 1939	Mar., 1940	Apr., 1939	Apr., 1940
Cars taxed on horse-power						
Exc. Not exc.						
10 h.p.	15,980	2,950	27,112	5,093	18,052	3,540
15 h.p.	5,431	735	8,800	1,160	5,487	851
20 h.p.	1,112	86	1,709	168	1,092	167
25 h.p.	395	33	691	86	436	52
30 h.p.	438	33	717	78	448	52
30 h.p.	148	12	235	25	129	26
Electrically-propelled	0	0	0	0	0	0
Miscellaneous	5	0	0	0	1	0
Total	23,509	3,849	39,264	6,611	25,645	4,688
Cycles	3,112	619	6,449	1,714	5,331	2,276
Hackneys						
Exc. Not exc.						
8 seats	140	28	392	113	270	67
40 seats	120	53	429	123	363	128
Other	170	95	289	150	163	90
Total	430	176	1,110	386	796	285
Tractors						
Agricultural	14	18	6	5	15	21
Showmen's	0	0	0	0	0	0
Other	16	12	19	11	14	28
Total	30	30	25	16	29	49
Agricultural engines (5s. class)	674	1,578	885	2,185	828	2,213
Exempt						
Government-owned	1,411	174	1,662	394	1,608	717
Other	124	405	119	375	143	178
Total	1,535	579	1,781	769	1,751	895
Goods						
Agricultural vans and lorries	66	47	107	58	68	52
Showmen's special vehicles	0	0	2	0	1	0
Local authorities (watering and cleansing)	4	6	7	1	7	2
Other goods vehicles						
Weight unladen						
Exc. Not exc.						
12 cwt.	773	421	1,203	643	654	359
2½ tons	3,429	1,522	5,454	1,925	3,384	1,257
5 tons	299	225	449	217	354	235
Total of other goods vehicles	4,501	2,168	7,106	2,785	4,492	1,891
Total	4,617	2,259	7,304	2,909	4,519	1,945
Grand totals	33,907	9,090	56,821	14,590	38,897	12,351

Road Plans for After the War

Many large road building projects were begun in the spring and summer of 1939, but in most cases the outbreak of war in September caused them to be held up. These, and other schemes for which land was being acquired in September, will be ready for proceeding with when peace returns. The Ministry of Transport has stated that a large programme of road building will be available as soon as the war ends. At the same time, it is pertinent to point out that, although the work will be available, the decision as to the rate at which it will be undertaken will rest not with the Ministry but with the Treasury. During the twelve months before the war, the Minister of Transport had approved more than 400 trunk road improvements, the estimated cost of which was then

£6,500,000. These were in addition to schemes valued at more than £106,000,000 which were accepted in principle under the five-year programme initiated in 1935. Wherever it is possible to continue preliminary work without the appointment of additional staff, this is being done, and in all more than 100 major schemes are in course of preparation, although land acquisition is entirely suspended. Among the larger projects which will be ready to be undertaken when peace comes are:—

St. Albans by-pass 23 miles long, from North Orbital road to beyond Markyate; cost £2,000,000;

Doncaster by-pass, 10 miles, cost £1,000,000, and other Great North road schemes for 90 miles of new roads, all approved last September;

Maidenhead and Staines by-passes, each including a new bridge over the Thames;

Swanley, Maidstone, and Ashford by-passes to complete modernisation of London—Folkestone road;

Completion of Dartford tunnel, Cromwell-road extension, and other schemes temporarily suspended.

Dartford Tunnel and Approach Roads

In connection with the Dartford tunnel, it may be remembered that, on the application of the Kent County Council the Minister of Transport made a grant from the Road Fund in November, 1938, towards the cost, estimated at £90,000, of acquiring land for the construction of a new arterial road, 9½ miles long, which is to form the southern approach to the Dartford—Purfleet tunnel. This road will begin at Green Street Green (near Farnborough), where it will form a junction with the London—Hastings Road (Route A.21). Curving gradually to the north-east, it will cross the London—Folkestone Trunk Road near Swanley Junction and terminate at the London—Dover Road (A.2), near Pilgrims Way, Dartford. From this point there will be an inner approach road, which, however, is intended to form the subject of a separate grant. By providing direct connection with the most important roads radiating from London through Kent, the new road will afford access from the tunnel to all parts of the south-east coast. The width of the road will be 120 ft. and the proposed layout includes dual carriageways, cycle tracks, and footpaths.

Northern General Transport

Because of the variety of dates to which bus companies make up their annual accounts, and on which they hold their annual meetings, it has fallen to Mr. R. J. Howley to be the first Chairman of a large railway-associated bus company to explain to his shareholders the experience gained in working under war conditions for four months before the closing of the accounts and for over seven months before making his speech. When Mr. Sidney E. Garcke, Chairman of the East Kent Road Car Co. Ltd. addressed his shareholders on December 19, he could present accounts covering only one month of war. On April 11, Mr. Howley, at the annual general meeting of the Northern General Transport Co. Ltd., said that the prices of fuels used had steadily increased during October and November. The company was now paying approximately 3½d. a gallon more for petrol and 2½d. a gallon more for fuel oil than it had been earlier in the year. Thanks to having laid in stocks shortly before the outbreak of war, the company had been able to keep down the average cost of fuel during the latter part of 1939; but he warned shareholders that only a small part of the increased costs at which fuel and materials had been bought since the war began was reflected in the accounts to the end of last year. The war brought other problems to the company, one of which was the need to blackout all its premises. Everyone not actually running the buses was turned over to this task, which was not easier because of the ownership of a number of large sheds normally lighted from the top. Another problem was the lighting both inside and outside of the vehicles themselves. Many costly stages of alteration had to be undertaken before



Above: Service depot to provide motor vehicles with fuel, oil, and spare parts, such as have been provided at regular distances along the German national motor roads. They contain a rest room, kitchen, refreshment room, and lavatory accommodation for both sexes. The view shows an army column taking fuel

Left: Reichsautobahn crossing the Schwäbischen Alps between Stuttgart and Ulm, where the road is carried along the side of the Drachenstein Drop. The parking places at the side will be noticed

arriving at standards of lighting which complied with regulations and at the same time allowed passengers to find seats and conductors to issue tickets and give change.

London Coastal Coaches

Notwithstanding the war, and its effect on passenger road transport, the directors of London Coastal Coaches Limited decided to hold the usual annual birthday celebration at Victoria coach station. Accordingly, the eighth anniversary of the opening of the station was marked by a reception of agents and friends at the headquarters. Although it was not possible to provide the exhibitions of publicity matter, vehicles, and so forth, as in former years, it was felt that there was ample justification for celebration, for, despite the difficulties of the past few months, including petrol restrictions, blackout, and the worst weather in history, the coaching industry had progressed. Coach design, mileage, agencies, and above all passenger figures, had been extremely satisfactory. The demand for coach travel had shown itself to be continuous and, if anything, greater than hitherto. Unfortunately, it is stated, owing to petrol restriction, many passengers have to be refused at busy times, but this is inevitable in present conditions. Over £30,000,000 of capital is invested in the London Coastal Coaches group of associated companies which operate road services to all parts of the country. Although it has been necessary to curtail some of the services, it is true in general that all the places on the peacetime routes are being served as far as possible. In some cases the need for a coach service has been removed by factors arising from the war.

Employment of Women Conductors

The difference which the Industrial Court was asked to decide recently (in accordance with the provisions of the Industrial Courts Act, 1919) concerning the terms of employment of women conductors to replace men during wartime, was one which arose between the employees' or trade union side and the employers' side of the National Joint Industrial Council for the Road Passenger Transport Industry. The award (which we recorded briefly at page 659 of our May 3 issue) affects only municipal transport employees outside the London area, and does not apply generally to women bus conductors, as seems to have been assumed in some quarters. In accordance with the provisions of the Road Traffic Act, 1930, a person over the age of 18, without sex distinction, may obtain a licence to act as a conductor on a passenger service vehicle, and women of 18 upwards are regularly employed in peacetime by numbers of bus companies, both railway-associated and others. In many cases—especially in the North of England and in Southern Scotland—the employ-

ment of women conductors is affected largely by considerations of economy, as it is recognised practice that they are paid at lower rates than men.

The National Joint Industrial Council for the Road Passenger Transport Industry was formed in 1937 to succeed an earlier "Whitley" Council, the scope of which was restricted to tramways. This earlier council had functioned since September, 1919, and it embraced both local authority and company operators. By agreement it controlled also the rates of pay and conditions of service of trolleybus employees, but at no time was it empowered to deal with bus employees. It was formally terminated on April 8, 1937. The present National Council held its first meeting on May 6, 1937, and its functions include the settlement of the rates of pay and conditions of service of those employed on tramways, trolleybuses, and motorbuses. Its constitution is such as to admit to membership company operators as well as local authorities; out of 95 local authorities operating passenger transport undertakings, 91 are members of the council, but at present there are no company operators in membership. The undertakings covered by the council include those in all the populous centres of the country, excluding the London area, and the transport provided is mainly short stage urban services. The total number of employees on the undertakings controlled by the National Council is about 60,000. The total number of male conductors employed at February 27, 1940, was about 25,100, and of these approximately 1,100 were juniors, that is, under 21 years of age.

Before September, 1939, there were no women conductors employed by local authorities, apart from a few at Glasgow who, by special arrangement, had been continued from the 1914-1919 war. At the outbreak of the present war some authorities found it necessary to employ women conductors, and at the end of February, 1940, there were about 600 women employed by nine undertakings. Of these, the large majority were in the employment of Birmingham and Manchester Corporations. Other undertakings have intimated their intention to employ women conductors, and the number of women conductors is increasing daily.

The present rates of pay of employees governed by the National Council are based generally on the rates of pay determined by the tribunal for the tramway industry in its report dated November 1, 1924, with subsequent advances. The rates determined by the tribunal were for adult male employees on trams and trolleybuses only, and on the institution of the present National Council in 1937 analogous rates were applied to bus employees, by agreement between the parties concerned. Under the decision and agreement, the rates for conductors are commencing rates, rising by increments over a period of three years to maximum rates. The

rates of pay, the increments, and their incidence, vary in the different municipalities. The conditions of service of the workpeople employed in the various undertakings are those contained in an agreement between the parties arrived at by the National Council on October 21, 1937, which prescribes the guaranteed week of 48 hours.

In the present instance, the Court has awarded that women conductors being employed to replace men shall be over the age of eighteen, and that the scales of pay of women conductors shall be as follow:—

For the first six months of service, not less than 90 per cent. of the adult male conductors' commencing rate and thereafter the scale of pay and increments applicable to adult male conductors in the undertaking in which they are employed.

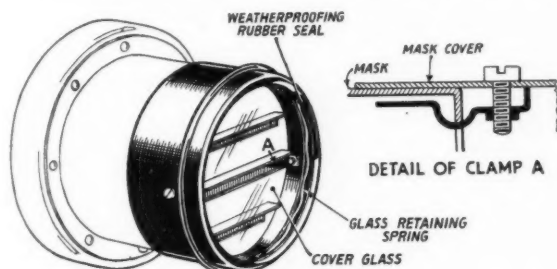
Provided that women under 21 years of age, during such time as they are under that age, shall receive not less than 90 per cent. of the adult male conductors' commencing rate in the undertaking in which they are employed. Women who during service attain the age of 21 and have served for not less than six months shall receive the full rate.

The conditions of employment of women conductors affected by the award are to be the same as those provided in the agreement of October 21, 1937, applicable to adult male conductors, save that the guaranteed week may be for 40 hours instead of 48 hours, provided that all time worked in excess of 40 hours shall be paid for at the overtime rates applicable to adult male conductors. The parties are in agreement that the award shall be for the period of the war only and until such time as the men return to their employment.

Protector for A.R.P. Headlamp Masks

In bad weather trouble is experienced with the slotted type of A.R.P. road vehicle headlamp mask caused by fouling by snow, sleet, or mud, which enters the slots and obscures the translucent light screen fitted to the back plate. The regulation allowance of light is so small that drivers can ill afford this deterioration in mask efficiency, especially under the weather conditions that give rise to it.

Joseph Lucas Limited has developed a protective cover suitable for all makes of headlamp mask. It consists of a rim fitting closely over the "top-hat" portion of the mask and holding in front of the mask a clear protective glass, which when clean does not interfere with the transmission of light and which, when sullied, can be wiped over easily



Dust excluder for headlamp mask

with a cloth. Dirt inside the mask is more difficult to remove and its gradual accumulation may go unsuspected until driving visibility is impaired to a dangerous degree. The rim of the protector is of rust-proofed steel, finished in ebony black. The glass is held in position by a strong spring, bedded on a weather-proofing rubber bead. Attachment to the mask is by two clamps inside the rim, which are so shaped as to enter the centre light slot in the mask when the protector is slid on. When the clamp screws are tightened the protector cannot be removed except by loosening the screws. The protector is thus "snatch-proof."

A somewhat similar cover for converting the disused headlamp of a vehicle into an illuminated identification sign has also been marketed by Joseph Lucas Limited. This is used on the lamp direct without any A.R.P. mask, and it is primarily for vehicles on police, A.R.P., and other special duties. It gives white lettering on a black background except for fire service in which the lettering is required to be amber coloured.

The Petroleum Board

In our December 15 issue (page 767) we described in some detail the composition, personnel, and functions of the Petroleum Board. It was shown that the board, which came into operation on September 3, was a voluntary organisation, but, nevertheless, was established in compliance with the wishes of the Government, which had approached the petrol distributors and asked them to prepare a scheme for distribution in the best way under emergency conditions. The method adopted was for the parties joining the scheme to eliminate brands of motor spirit and to pool all their resources used in petrol distribution in the United Kingdom, placing them under unified control. The Petroleum Board is concerned only with distribution in the United Kingdom and the responsibility lies with its constituent members for obtaining supplies and for refining in the United Kingdom. The board has now been registered as a company limited by guarantee without share capital and with the following directors:—

Sir Andrew Agnew (a Managing Director of the Shell Transport & Trading Co. Ltd.), Chairman
Mr. Rolland Beaumont (Director, Trinidad Leaseholds Limited)
Mr. Gerald G. Bell (Director, Anglo-American Oil Co. Ltd.)
Mr. Reginald A. Carder (Director, Anglo-American Oil Co. Ltd.)
Sir William Frazer (Deputy-Chairman, Anglo-Iranian Oil Co. Ltd.)
Mr. Frederick Godber (Director, Shell Transport & Trading Co. Ltd.)
Mr. Frank L. Halford (Director, Shell-Mex & B.P. Limited)
Mr. Albert Hittinger (Managing Director, National Benzole Co. Ltd.)
Mr. Alexander L. McColl (Chairman, Vacuum Oil Co. Ltd.)
Mr. Alexander J. N. Singleton (Director, Texas Oil Co. Ltd.)
Mr. Emile E. Soubry (Vice-Chairman and Managing Director, Anglo-American Oil Co. Ltd.)
Mr. Simon J. Vos, oil manager

The conversion of the board into a company limited by guarantee has been effected because that is thought to be the most appropriate form having regard to the pooling activities of the organisation. The registration does not mean any change in the operations of the board.

On May 21 the Petroleum Board announced that it had been found necessary to increase the prices of petroleum products as from the opening of business on the next day. The Government had agreed to the following increases (per gallon):—

Pool motor spirit, 1½d.
Pool diesel oil for road vehicles, 1½d.
Pool paraffin and vaporising oil, 1½d. London and south-eastern zone, and 1d. in other zones.
Pool White spirit, ½d.
Pool gas oil, 1½d.
Pool diesel oil (other than for road vehicles), 1d.
Pool fuel oil and heavy fuel oil, 1d.
Pool motor spirit in England and Wales and South Scotland now costs 1s. 11½d. a gallon. The wholesale price is 1s. 8d. a gallon. The previous increase in the price of petrol—from 1s. 9½d. a gallon to 1s. 10d. a gallon—was announced on December 23. Before rationing began on September 22, petrol was 1s. 5d. and 1s. 7d. a gallon.

Creosote Fuel

As a result of experiments with creosote, Halifax Corporation Transport Department has been able to extend certain of its night services with a dozen diesel buses which now run on a mixture of diesel fuel oil and creosote. There is no restriction on creosote consumption at present. Rochdale Corporation is to convert a score of buses to creosote operation, as a result of trials on six vehicles.

Producer-Gas Vehicles

In reply to a question in the House of Commons on May 22, Mr. D. R. Grenfell, Secretary for Mines, said that more than 190 lorries were now running on producer gas and there was record of nearly 2,000 gas producer plants building.

Timber Supplies

Manufacturers or coach builders requiring hardwood or imported soft wood for the repair, maintenance, or construction of motor vehicles for civilian use in this country, or for export, must now apply to the Secretary, Ministry of Transport, Room 349, Metropole Buildings, Northumberland Avenue, London, W.C.2.

New Chicago Subways

To avoid long detours via existing elevated lines, two direct subway sections are being constructed under Chicago. One of the tunnels beneath the Chicago River is pre-fabricated, towed to the site, and sunk in the bed

WORK began in December, 1938, on two sections of new subway under Chicago known as the State Street and the Dearborn Street tunnels, 4.42 and 3.28 miles in length respectively. The intention is that they should be operated by a new corporation to be known as the Chicago Transit Company, which is seeking powers to work the elevated, surface tram, and bus services. The city authority is, however, with the approval of the Public Works Administration, letting the contracts for the various construction works, estimated to total \$40,250,000, out of a total construction cost of \$46,000,000 without equipment. Towards this sum the Federal Government is subscribing \$18,000,000 as a P.W.A. grant, and \$28,000,000 is to be found by the city. Should the proposed city transport reorganisation under the new company not receive legislative sanction in time, the subways would be used by buses.

The contracts already let cover 6.49 out of the 7.70 miles of double parallel tunnels, either separate or Siamese twin tubes. The routes were selected in the expectation of operation in the form of through elevated train services from the suburbs being diverted from their present routes to dip down underground into the new subways. It is estimated that the State Street subway will effect a saving of eight minutes to passengers coming in from the north, and 3½ min. to those from the south, and that the Dearborn Street section will secure a saving of 12½ min. to and from the north-western suburbs. But a greater improvement will result from speeding up all trains still using the downtown elevated loop line, which will continue in use until contemplated additional subways are built, as the subways now under construction will divert traffic from the loop and enable a reduction of trains during rush hours from 68 to 38 each way, and a reduction of time from 17 to 10 min. for the loop line service. It is estimated that the State Street line will carry 75,000,000 and the Dearborn Street line 25,000,000 passengers annually.

Methods of Construction

The new tubes are either circular or horseshoe in section, the former 16 ft. 10½ in. and latter 15 ft. 7 in. from track

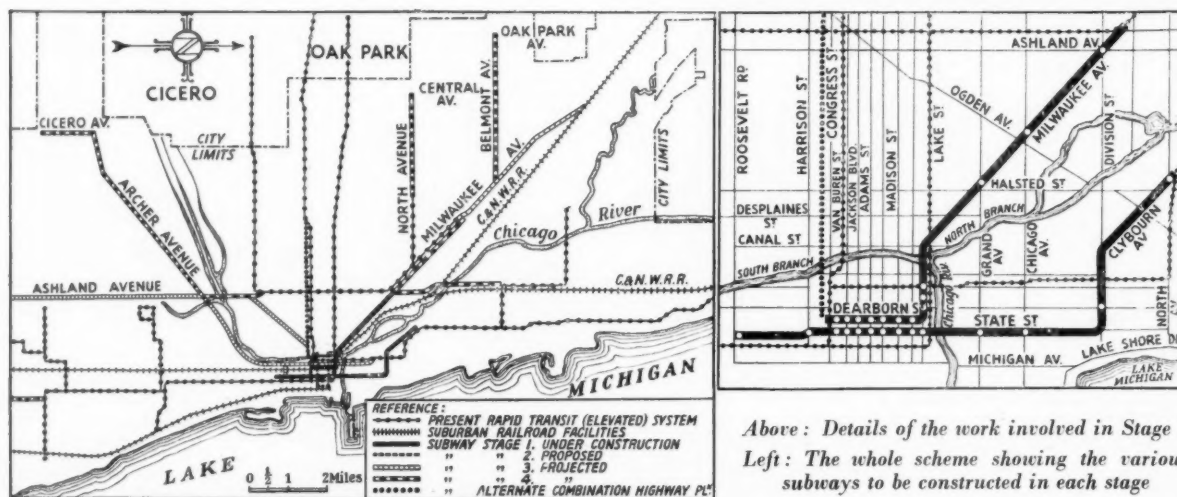
level to inside of crown. The walls are of reinforced concrete, and under State Street, the inner bottom level of the tubes will be 44 ft. and platforms 39 ft. below street level. Booking offices will be 15 ft. below surface, and escalators and stairways will connect them with the platforms. At some stations there will be island and at others outside platforms.

Three main methods of construction are being followed. For the outlying sections to the north and north-west and also in the Lake Street river crossing on the Dearborn Street line, the Chicago sewer method has been adopted. Horseshoe tunnels are dug, primary linings of light plates and ribs are put in place, and concrete is poured in. The excavation is manual behind air locks, work being done under 12½- to 15-lb. pressure. In the loop district where the soil is too plastic for this method, hydraulically driven circular steel shields are being used.

Chicago River Section

For carrying the State Street line under the Chicago River a novel method is being adopted. As there are stations nearby, it was considered advisable to have the under-river length as high as possible, and the 200-ft. section of twin tube under the river bed has, therefore, its top only 5 ft. below the bed. Consequently, the twin steel tubes were erected in a dry dock and enclosed and lined with concrete prior to being sealed with bulkheads and floated to site, there to be sunk in a dredged trench. Cofferdams will be built at the river banks and the ends connected with adjoining lengths of tube; caissons on each side of the tunnel in the cofferdams will form supports for the abutments of the new State Street bridge to span the river above the tunnel site. The double steel tube structure is arc welded throughout by the shielded arc process with the Lincoln Electric Company's process.

The Lake Street crossing of the other branch of the river on the Dearborn Street line, having no stations in its immediate vicinity, is dipped down to the lowest level in all the tunnels, namely, 90 ft. below street level. The south end of this section is a dead-end, but its northern end and both ends of the State Street section terminate in



Above: Details of the work involved in Stage 1

Left: The whole scheme showing the various subways to be constructed in each stage

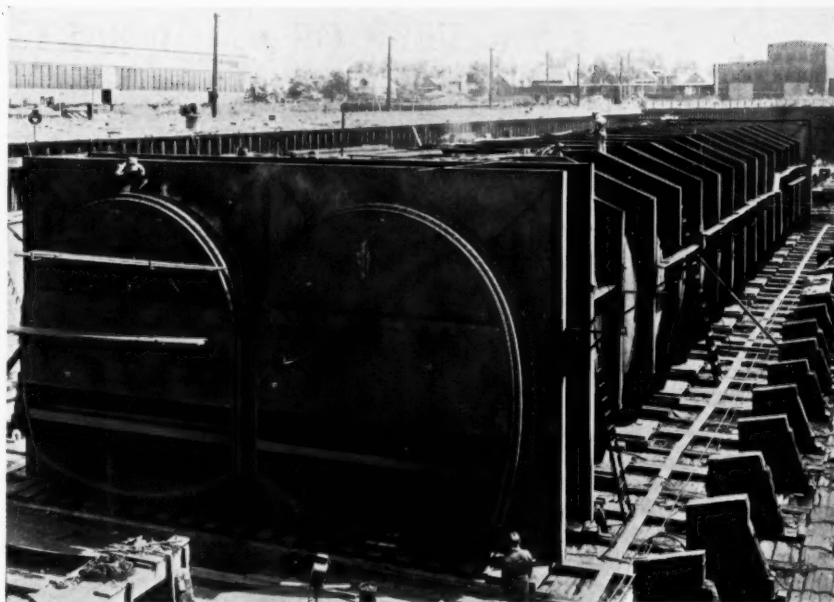
tunnel portals, where the lines emerge from underground. It is expected that the Dearborn Street section will be completed by October next and the State Street section by January 1, 1941.

Subsequent Subway Extensions Planned

Actually, the subways so far mentioned constitute only the initial stage of the full scheme; the three subsequent stages are (2) subway connections to the Metropolitan and Lake Street branches of the Rapid Transit System, estimated to cost \$11,700,000, and the construction of east and west subways at Washington and Jackson Streets to accommodate underground street traffic of all kinds. The latter, as well as providing rapid east to west train services, will connect four major railway stations and greatly relieve surface traffic. As it also will cost \$11,700,000, Stage 2 is estimated to cost in aggregate \$23,400,000, for 3.6 miles of subways.

Stages 3 and 4 consist of further extensions of 18.8 miles and 20.4 miles respectively of the subways, at costs of \$96,000,000 and \$102,000,000. The principal routes followed in Stage 3 are Ashland Avenue, outer Milwaukee

Avenue, and the city approach to Archer Avenue; those in the 4th Stage are along Archer Avenue and inner Milwaukee Avenue, North and Belmont Avenues, and other streets to the north-west of the city.

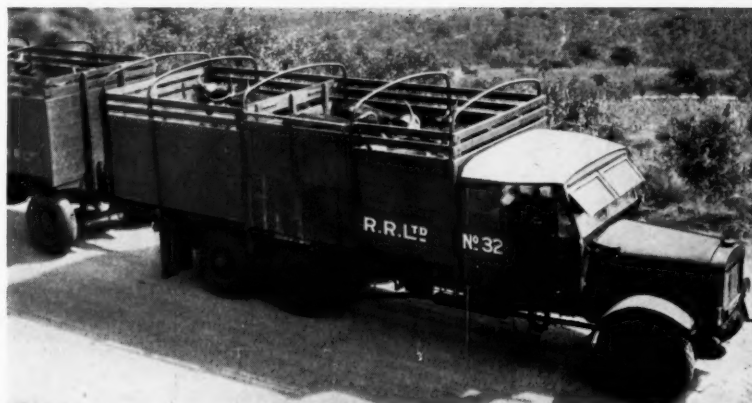


Twin-tube 200-ft. tunnel section fabricated by welding in dry dock, and ready for concreting, floating to site, and sinking across bed of Chicago River



Rhodesia Railways four-ton semi-passenger Albion lorry, with 4LW Gardner diesel engine. It is capable of carrying a load of 24 native and five European passengers, or 8,000 lb. of goods. The body was built by the C.M.E.'s Department, Bulawayo

Special cattle lorry and trailer used by the Rhodesia Railways Limited for the evacuation of cattle from the eastern border districts to railhead at Umtali



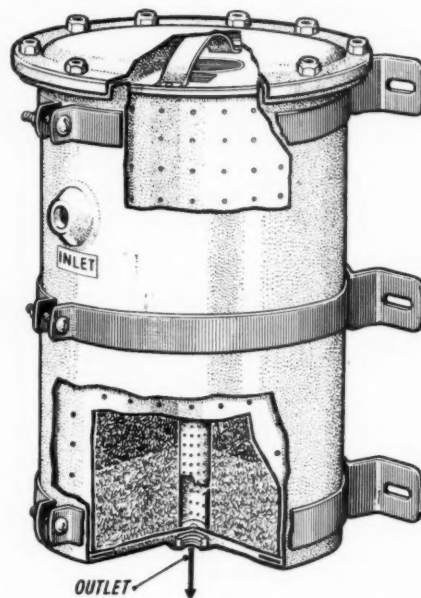
The Fram Oil and Engine Cleaner

A device which treats lubricating oil both physically and chemically

TO maintain engine lubricating oil in a usable condition for a reasonable length of time engine manufacturers provide some form of filter or strainer as a standard fitting, but the performance of these generally leaves something to be desired, as samples of lubricant drawn from the sump will readily show. Mechanical straining successfully removes larger particles of carbon, grit and metal, but it cannot check chemical changes resulting from oxidation and the introduction of fuel and water by condensation into the lubricant. Some form of chemical treatment is required to combat chemical changes. Such treatment is provided by the Fram oil and engine cleaner, a device introduced in this country by Simmonds Aerocessories Limited and now manufactured near London.

The Fram cleaner is intended to operate on the bypass principle, receiving only a fraction of the oil output from the engine oil pump. In fitting this cleaner it is necessary to take only a tapping from the high pressure side of the pump and arrange for the return of the clean oil to the sump. The cleaner unit itself is usually mounted on the dash. It is not necessary to disturb the strainer normally fitted, which should indeed be allowed to continue to collect as much foreign matter as it can and so to prolong the useful life of the removable Fram cartridge. This cartridge is held in a cylindrical container, being pressed down on a cork seating ring to make an oil-tight joint when the container lid is screwed down against the cartridge lifting handle. This handle is in the form of a spring. Dirty oil enters the annular space between the cartridge and the container by a pipe led in from one side. It percolates through the cartridge to a perforated pipe at the centre and passes back to the engine through the bottom of the cleaner. The cartridge checks the passage of all solid particles and it is said to remove colloidal matter and acidity. The filling of the cartridge is chemically impregnated so that the action may be more thorough

than that obtainable from an ordinary filter. According to the patent specification the porous body is of cotton waste treated with a form of alkylol amine, which is



Construction of Fram oil-treating filter

insoluble in hydrocarbon oil and not easily miscible with it. Some favourable reports have been received of the improvement obtainable in the life of engine oil and of engines themselves with the Fram cleaner.



A "Sea Tractor" Bus in South Devon

ONE of the most unusual public passenger-carrying vehicles in Great Britain is that which maintains the service between Bigbury-on-Sea, in South Devon, and Burgh Island. This conveyance, which is described officially as a sea tractor, is shown in the illustration reproduced alongside, from which it will be seen that the deck which carries the passengers and the engine is about 10 ft. above ground level. The route is approximately a quarter of a mile in length, and part is covered by water at high tide. Accordingly, the tractor is equipped to run through 8 ft. of water. It was designed by Sir John Carden Lloyd and has now been in use for nine years. Power is supplied by an old 24-h.p. Ford engine, and is transmitted to the rear axle by long driving chains. The front wheels are shod with motorcar pneumatic tyres, but creeper caterpillar tracks, as used by armoured fighting vehicles, are adopted in place of rear wheels to facilitate travel over the sand. The tractor is not licensed as a passenger service vehicle, as it runs only on the sand and on private property, but it is under the supervision of the Board of Trade. The service is maintained by the proprietors of the Burgh Island Hotel, and non-residents are charged 3d. a journey. We are indebted to Mr. Gordon Hudson, Manager of the Burgh Island Hotel, for certain of these details.

Transport Managers Discuss Alternative Fuels

High-pressure and low-pressure gas, producer gas, and creosote under review at London conference

IN his paper entitled "Ways and Means in Wartime," read before the Annual Conference of the Public Service Transport Association on May 2, Mr. Ben England, General Manager of Nottingham City Transport, said that gas-using goods vehicles which received only one-sixth of the normal ration of liquid fuel now receive one-half, but in the case of p.s.v. the matter was not so clear cut. A letter from the Ministry of Transport in February made it clear that the Minister was anxious to encourage the use of alternative fuels, and stated that p.s.v. mileage operated on producer gas or coal gas would not be taken into account in assessing issues of liquid fuel. But it was emphasised that liquid fuel would not be issued for the maintenance of any service which was, in fact, operated by gas. This showed that any mileage performed on gas would not bring about a corresponding reduction in the liquid fuel ration; on the other hand, in the event of a percentage cut in existing rations of liquid fuel, no attempt would be made to make a larger cut merely because the operator had equipment to run a considerable mileage on gas.

Referring to producer gas in the discussion on Mr. England's paper, Mr. R. Stuart Pilcher (Manchester Corporation Transport), said that difficulties associated with the use of trailer apparatus were extra accommodation and shunting arrangements at the depots; cleaning; and the cost of the equipment, which he understood would be about £160. Moreover, if trailers were not used, the seating capacity would have to be reduced.

Low-Pressure Gas

Mr. Wyndham Shire (Birmingham & Midland Motor Omnibus Co. Ltd.) said that in 1918 he had some 50 vehicles running on coal gas and they covered about 40,000 miles a month, consuming about 2,000,000 cu. ft. of gas, equivalent to 6,000 or 7,000 gal. of petrol. About 300 cu. ft. were equal to one gallon of petrol, and the cost of operation on gas was 2.75d. a vehicle-mile compared with 5.5d. a mile on petrol, which in 1918 cost 2s. 10d. a gallon. Low-pressure gas in a balloon was just as efficient as compressed gas, and was easier to handle. He was not a believer in producer gas, in which there were so many impurities that he could not imagine it being successful on a motor vehicle. The impurities were very small and caused an enormous amount of wear in the cylinders. Even with efficient gas from the thermal point of view, a lot of weight was being carried. It might be said that producer gas would enable one to carry on, but it was no use carrying on with something which left little of the engine after a certain period.

Creosote

Mr. G. H. Margrave (West Riding Automobile Co. Ltd.) said his company had been interested in the use of gas since a tax was first imposed upon road fuel about 10 years ago. Experiments had been made with creosote, and after a vehicle had run 7,000 miles it was found that a dilution of 1 in 5 gave a better mileage and without any injurious effect on the engine. It was hoped that soon vehicles would be able to run in regular service on a fuel comprising four parts of diesel oil and one part of creosote.

Major F. J. Chapple (Bristol Tramways & Carriage Co.

Ltd.) said that, although low-pressure gas in balloons was a practical thing, it was limited in range to 14 or 15 miles a charge, and there was a 10-min. delay at the filling station. No better value was to be obtained from high-pressure than from low-pressure gas, and possibly less, because the benzol was lost from the gas, but against this there was the possibility of injecting the gas and using it on compression-ignition principles. To compress gas to 5,000 lb. per sq. in. the compressor cost £4,000 and had a nine-months' delivery delay.

Producer Gas

Producer gas was certainly dirty and messy, and there was trouble with impurities; nevertheless it was the only alternative fuel system which could be operated on a large scale today. The most efficient engine at present was the compression-ignition engine, and if there was any industry which maintained its engines efficiently it was the bus industry. Therefore too much pressure should not be put on people who were using their fuel in the most thorough manner, because smaller operators, such as lorry owners, showed a fuel consumption which was frightening to bus operators. There were large numbers of them, and the fuel used by them in the aggregate was considerable. The original committee on alternative fuels, presided over by Sir Harold Hartley, even considered the advisability of continuing to use liquid fuel on p.s.v. because of what it regarded as the comparatively small use in relation to the tremendous use by the commercial vehicle. This committee did not consider the possibility of using alternative fuels on p.s.v. for the reason stated.

Those operators who had been thinking of using bituminous or high-volatile coals had better forget producer gas. Those who objected to price would have to swallow their objections, because the only real prospects of finding suitable fuels were from low-temperature and medium-temperature cokes, and at the prices obtaining until recently there was no temptation for the coke-oven people to go into the production of such fuels seriously. The rising price of producer fuels was a matter of policy to which the Government had agreed. The main technical difficulty with producer gas at the moment was the filtering of the gas, but the problem should not be insoluble. The filtering difficulties increased with the rate of gas flow, and with a 4-litre engine quite good results might be obtained; but with an 8-litre engine the amount of dust had gone up with the square, or even with the cube, of the gas velocity, and the troubles increased considerably. From the Government and national points of view the use of the gas producer should be encouraged for the most suitable types of vehicle.

Mr. G. Mackenzie Junner (*The Commercial Motor*) referred to the possibility of using medium-pressure gas stored in a container fabricated on the lines of a pneumatic tyre but which would take a pressure of several hundred lb. per sq. in. It had been stated that a good high-pressure (5,000 lb. per sq. in.) compressing plant to supply a fair number of vehicles would cost £14,000 and not £4,000. Further, the Government had a lien on many steel cylinders used for high-pressure storage and an operator might find himself in an unenviable position if with practically no warning the Government took away his cylinders.

Overseas Notes

Buenos Aires Transport

The proposals drawn up by the Buenos Aires Transport Corporation for the reorganisation of the city's passenger services have been rejected practically *in toto* by the Central Control Board. This will entail the drafting of entirely new plans and still further delay the bringing of the scheme into full operation. The objections raised by the control board are embodied in a lengthy memorandum which criticises the corporation's proposals as being more concerned with minor details such as the suppression of itineraries and the modification of routes, with the object of reducing working expenses, than the creation of an efficient passenger service adapted to the growing needs of the city. No provision is made for establishing intercommunication between, and extension of, the existing underground lines; the co-ordinated working of the different transport systems at present in operation; and the organisation of through non-stop services to outlying points. The board also points out that the corporation's

The corresponding specifications and conditions of such tenders must be submitted to the board for approval, or failing this, the materials be the same as those in use by the State Railways, the National Oilfields, or other Government departments.

A scheme, which has been under consideration for some time, for removing most of the tramway lines from the central zone of the City of Buenos Aires has now been drawn up by the transport corporation for the approval of the Government. The project provides for a more intensive use of the underground lines and the gradual replacement of the tramways by buses and micro-buses (*colectivos*), with a view to giving a more efficient passenger service within the metropolis at reduced running costs.

Reconstruction of Niagara Bridge

Hon. T. B. McQuesten, Ontario Minister of Highways, announced on April 16 that construction of the Rainbow bridge at Niagara Falls would begin immediately and would be completed by August, 1941. The new bridge will replace the Honeymoon bridge (of the International Railway), which collapsed in 1938 when ice floes undermined its supports, and will be 500 ft. to the north of its site. Although highway construction will be curtailed this year under wartime limitations, Mr. McQuesten said that work on the bridge would be expedited in order to make available one of the most important tourist inlets on the Canadian-American border. President Roosevelt has signed authority for the bridge erection, and a \$3,500,000 bond issue was placed with a New York firm.

Bombay Provincial & Regional Transport Authorities

The Government of Bombay has decided to constitute a Provincial Transport Authority and five Regional Transport Authorities under the Motor Vehicles Act of 1939; these bodies will function as from April 1, 1940. The Advisor to

the Governor in charge of the Revenue Department will be the Chairman of the Provincial Authority which will consist of the Inspector General of Police, the Chief Engineer and Secretary, Public Works Department; one representative each from the Bombay Chamber of Commerce, the Indian Merchants' Chamber, and the Indian Roads and Transport Development Association; also a member of the Bombay Legislature to be appointed by the Government; and a member-secretary to be appointed by the Government. The Regional Transport Authorities will operate in Bombay, Gujerat, the North Deccan, the South Deccan, and the Karnatak.

Road Transport in North China and Mongolia

On April 17, 1939, the Kahoku Kotsu Kaisha (North China Railway Company) was established by the Japanese authorities not only to undertake the restoration of the railways damaged by the Japanese invasion of China, but also to extend the existing lines and to assume responsibility for other forms of transport. These activities include control of motor transport services and conveyance by water. The length of motor roads built and placed under the management of the K.K.K. at present totals 5,000 km (3,100 miles) in North China. Some 3,400 km (2,100 miles) of roads in Mongolia are now being managed by the associated undertaking, the Mongolian Motor Company.



Express goods delivery vans, East Indian Railway

proposals include an extension of the existing surface tramways, which is contrary to the principles laid down by the corresponding Law No. 12311, which provides for the gradual elimination of the tramway services and the lifting of the tracks in the central zone. The control board's memorandum states that the proposed reorganisation must embrace the following fundamental points:—

(a) *Vehicles*: To be selected from the standpoint of their technical construction and general characteristics, seating capacity, and running costs, taking into consideration the particular service for which each type is intended.

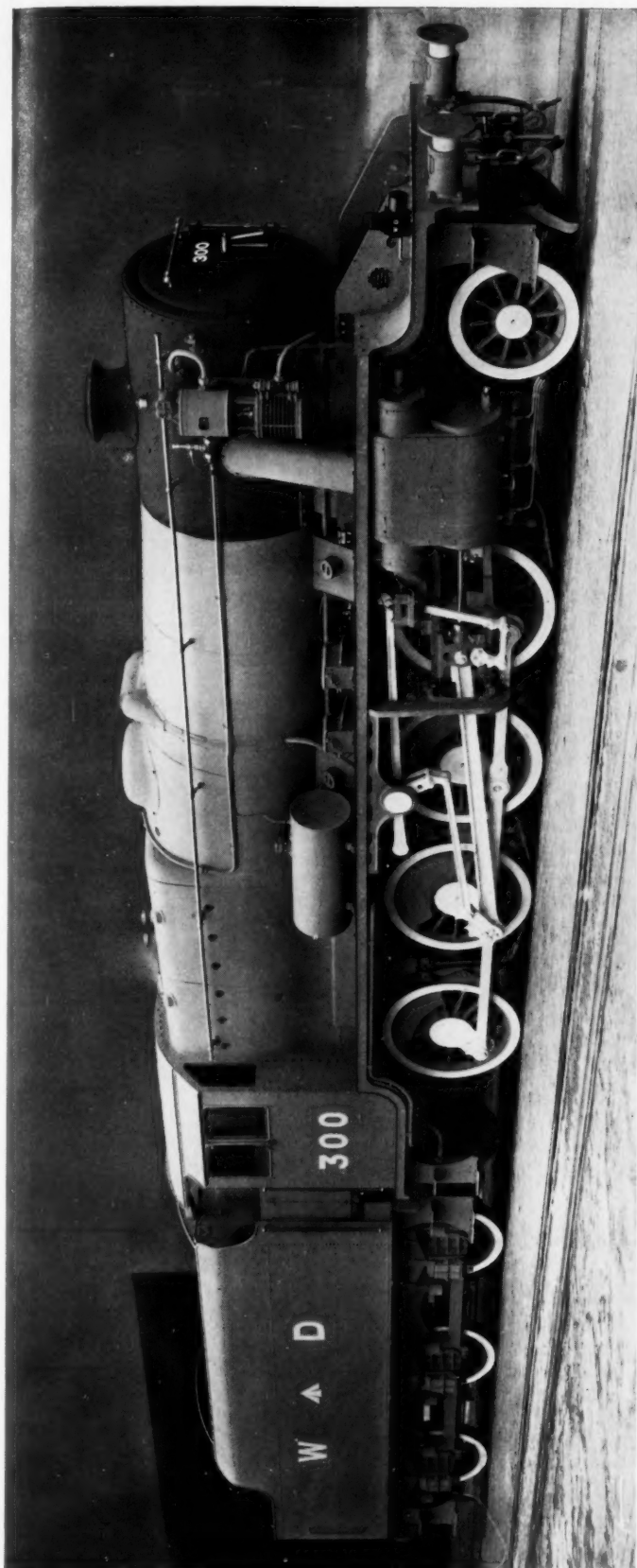
(b) *Speeds*: To be regulated in accordance with the various types of vehicle in operation and the relative density of street traffic.

(c) *Frequency of service*: To be based on the requirements of the different districts and centres.

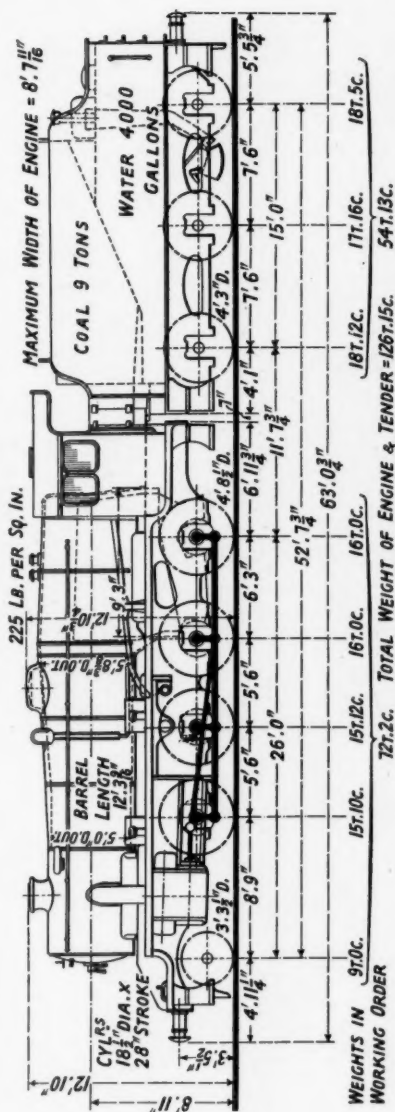
(d) *Economy in operation*: To be secured through the co-ordinated working of the four transport systems brought under the control of the corporation, the number of vehicles in daily circulation being regulated in accordance with traffic requirements at different hours.

(e) *Selection of systems*: Preference to be given to those methods of transport most favoured by the general public, having regard to the layout of the city and the relative advantages of each system.

The Central Control Board has issued instructions to the corporation that orders for materials or equipment for the use of the transport services, involving an expenditure of more than \$5,000 per annum, shall be thrown open to public tender.



The first of the new British-built 2-8-0 locomotives for France, of which 240 are being constructed in the works of various British locomotive manufacturers to the order of the Ministry of Supply. The locomotive illustrated was the one of which the Director of Transportation Equipment took formal delivery last Friday (see page 782)



Standard class "8F" 2-8-0 goods locomotive, L.M.S.R., as adopted by the War Department for overseas service

Railways and the War—21



Interior of a Paris suburban railway carriage fitted up as a ward car for use in French Red Cross military ambulance trains

RAILWAY NEWS SECTION

PERSONAL

The Secretary of State for the Colonies has recently approved the following appointments:—

Mr. A. Busby, Administrative Assistant, to be Principal Administrative Assistant, Nigerian Railway.

Mr. J. H. Evans, Secretary to Director of Transport, to be Assistant Traffic Officer, Nigerian Railway.

Mr. W. S. Mee, Assistant Secretary to Director of Transport, to be Administrative Assistant, Nigerian Railway.

INDIAN RAILWAY STAFF CHANGES

Mr. H. P. Renwick has been promoted to Deputy Chief Mechanical Engineer, G.I.P.R., in a provisionally permanent capacity.

The following Royal Engineer officers employed on State-managed railways have recently reverted to military duty: Majors K. N. Simner (N.W.R.), J. E. Clutterbuck (G.I.P.R.), D. McMullen (N.W.R.) and R. B. Emerson (G.I.P.R.), and Captains W. P. Reed (G.I.P.R.) and H. A. Davis (E.I.R.).

Mr. W. H. H. Young, Chief Operating Superintendent, E.I.R., has been granted 3½ months' leave from April 15.

Mr. E. J. H. Jacobson has been appointed to officiate as Divisional Superintendent, E.I.R., as from February 11.

Mr. D. M. F. Chisholm has been appointed to officiate as Deputy Chief Operating Superintendent, E.I.R., as from February 9.

The Spanish Government has approved the appointment of the following persons to represent the shareholders on the directing councils of the three principal Spanish railways, under the Law of May 8, 1939: for the Northern of Spain, Don José Moreno Ossorio and Don José Luis de Goyoaga y Escario; for the Madrid, Zaragoza & Alicante, Don José Navarro Reverter and Don Eugenio Espinosa de los Monteros; and for the Western-Andaluses, Don Wenceslao Gonzalez Garra and Don Ignacio Soler Damians.

Mr. Frederick Charles Anker, District Locomotive Superintendent, Nottingham, L.M.S.R., is retiring after 47 years of railway service. Mr. Anker entered Derby locomotive works, Midland Railway, as a pupil in 1893 and after experience in all the principal sections of the works and at Derby running shed, was appointed Assistant to the District Locomotive Superintendent, Bristol, in 1902. He later held a similar position at Leicester. In 1909 he was made District Locomotive Superintendent at Buxton, in 1919 he went to Skipton, Wellingborough in 1921, and to Nottingham in 1928.

Mr. A. S. Deacon, Superintendent of Workshops, Ipswich, Queensland Government Railways, has been appointed Chief Mechanical Engineer of that system, in succession to Mr. R. J. Chalmers, retired. Actually, these two posts have been amalgamated and an Assistant Mechanical Engineer appointed. Mr. Deacon gained his early experience with the North British Locomotive Co. Ltd., Glasgow, and later was employed on various railway and tramway undertakings in Great Britain. Subsequently he accepted an appointment on the Victorian Government Railways, and proceeded to Mel-

effect from February last year. He will be in receipt of a salary of £880 rising to £1,120 a year. Mr. Stott, in addition to being Chief Accountant was also Commercial Superintendent and was recruited on a three years' agreement. His salary was £1,500 a year. Mr. Edirisinghe has been for 33 years in the railway service and has risen from the ranks of the railway clerical service. He was selected as a Probationary Accountant in 1923 and was appointed an Assistant Accountant in 1925.

We regret to record the death on May 12, after an operation, of the Hon.



Group of representatives of the Ministry of Supply and wagon manufacturers at the inspection in the Midlands on May 20 of transport equipment for France

Left to right: Brigadier J. P. S. Greig, Director of Transportation, War Office; Messrs. R. Leguille, French National Railways; R. A. Riddles, Director of Transportation Equipment, Ministry of Supply; A. J. Boyd, Chairman of the Carriage & Wagon Builders' Association, and Managing Director of the Metropolitan-Cammell Carriage & Wagon Co. Ltd.; Peter Bennett, Director General of Tanks & Transport, Ministry of Supply; W. F. Walters, Ministry of Supply; and J. W. Kidd, General Manager, Metropolitan-Cammell Carriage & Wagon Co. Ltd.

bourne in 1919. In Victoria he rose to be Works Manager at Jolimont, where he was offered the post of Workshops Superintendent on the Queensland Government Railways in 1930, an offer he accepted.

CEYLON RAILWAY STAFF CHANGES

Mr. J. C. Smith, Operating Superintendent, has been granted long leave.

Mr. H. Mills, Divisional Transportation Superintendent, Colombo, will act as Operating Superintendent during Mr. Smith's absence.

Mr. M. P. Edirisinghe, who has been acting as Chief Accountant since the departure of Mr. L. T. Stott in 1938, has been confirmed in the appointment by the Secretary of State for the Colonies.

Mr. T. J. Jacob, acting Deputy Chief Accountant, has also been confirmed in that appointment.

Mr. Edirisinghe's appointment takes

Edward Alexander Stonor, late Chief Clerk and Taxing Master of Private Bills, House of Lords. He retired in 1932 from his post in the House of Lords after 41 years' service. During the war of 1914 to 1919 he served in the Royal Air Force, was made a Chevalier of the Legion of Honour, and received Belgian, Italian, Roumanian, Yugoslavian, and Russian decorations. Mr. Stonor was secretary of the Anti-Socialist & Anti-Communist Union from 1932 until 1939.

Mr. A. W. C. Air, principal railway assistant to Lord Plender, has recently retired from the service of Messrs. Deloitte, Plender, Griffiths & Company after nearly 50 years on their staff. Mr. Air, who is now in his 70th year, has been in charge of the Great Western Railway audits for nearly 30 years, and has spent long periods also working on other British and South American



Mr. A. W. C. Air

Principal Railway Assistant, Messrs. Deloitte, Plender, Griffiths & Company, who has retired



Mr. Michael Dewar

Chairman, British Timken Limited, and Fischer Bearings Co. Ltd.



Mr. H. E. Osborn

Appointed Assistant to Chief Financial Officer, London Transport

audits. He assisted Lord Plender during the last war in his work in connection with State control of railways, and subsequently when Lord Plender acted for the railway companies in the proceedings before the Railway Rates Tribunal for the fixation of Standard Revenue. Mr. Air was for many years also in charge of a number of audits for commercial companies, and his experience of railway accountancy was unique and this, together with his sound judgment, was always unreservedly at the disposal of those with whom he was associated. He takes with him in retirement the best wishes of a large number of railway officials.

Mr. Michael Dewar, Chairman of British Timken Limited, has assumed the Chairmanship of the Fischer Bearings Co. Ltd. The election of Mr. Dewar and of Mr. F. J. Pascoe, Financial Director of British Timken Limited, to the board of the Fischer Bearings Co. Ltd. was announced in THE RAILWAY GAZETTE of April 12. As stated elsewhere in this issue, British Timken Limited has acquired the controlling interest in Fischer Bearings.

Mr. H. E. Osborn, B.Com., who, as announced in our issue of May 10, has been appointed Assistant to Chief Financial Officer, London Passenger Transport Board, was born in 1909. He is a chartered accountant. After serving with Messrs. Deloitte, Plender, Griffiths & Company for 9 years, he entered the board's service in 1936 in the department of the Comptroller & Accountant. He assumed charge of the Statistical Office in February, 1939.

Mr. R. A. Sims has been appointed Claims & Salvage Agent, Great Western Railway, in succession to Mr. E. W.

Higginson, whose death we recorded in our issue of February 23. Mr. Sims entered the service of the company in 1902, and after 14 years in the Bristol district was transferred to Weymouth as Chief Clerk in 1916. In 1921 he returned to Bristol, and served in the District Goods Manager's office until 1930 when he was appointed Goods Agent at Weymouth. Four years later he was transferred to a similar position at Oxford, and in 1936 was made Chief Clerk to the District Goods Manager, London. Mr. Sims was promoted to be Assistant Goods Agent, Paddington, in 1937, and the next year became Assistant District Goods Manager, Bristol, the position he now vacates to become Claims & Salvage Agent.

Señor Manuel M. Arrillaga has been appointed Assistant General Manager of the Madrid, Zaragoza & Alicante Railway.

We regret to record the death on April 24 of Mr. J. K. McNeillie, Resident-President of the Delaware & Hudson Railroad. Mr. McNeillie, who was 66 years old, began his career as a call boy for the old Grand Trunk line at Lindsay, Ont., in 1891. In 1895 he joined the C.P.R. as a clerk at Farnham and two years later was transferred to the General Superintendent's Office in Winnipeg in a similar capacity. He joined the Canadian Government Railways at Moncton, N.B., as General Superintendent in 1915, and in 1917 was appointed superintendent of the Susquehanna Division of the Delaware & Hudson Railroad. Mr. McNeillie transferred to the vice-president's office at Albany in 1921 and became Resident Vice-President in 1935. He was also Resident Vice-President of the Naperville Junction Railroad. One of Mr. McNeillie's brothers, Mr. R. G. McNeillie, is Passenger Traffic Manager of the Canadian Pacific Railway.

We regret to record the death in a London nursing home, on May 2, of Mr. James Edmondson Monk, B.Sc., M.Inst.C.E., F.R.G.S., Engineer-in-Chief and officiating Chief Engineer, East Indian Railway, prior to his retirement in October, 1929. Mr. Monk joined that railway as a temporary Resident Engineer in June, 1914, and was appointed to be a District Engineer in November, 1924. He was selected to officiate as Deputy Chief Engineer in December, 1925, and was confirmed in that appointment five months later. Promotion to Engineer-in-Chief followed in May, 1927, and Mr. Monk was appointed to officiate as Chief Engineer in June, 1928. He celebrated his 65th birthday last March.

We regret to record the death on May 22 of Mr. William Vaux Graham, M.Inst.C.E., F.S.A., J.P. Mr. Graham, who was 81 years old, was a well-known consulting engineer in Westminster, and in 1921-22 was Chairman of the Association of Consulting Engineers, an association he joined in June, 1915. In the course of his long practice, Mr. Graham was associated with various railway enterprises, and was consulting engineer from 1896-97 for the East Herts Railway (afterwards absorbed in the Great Northern Railway); one of the consultants to the Winchester & Southampton Railway of 1900, which, however, was never constructed; and consulting engineer to the Wimbledon & Sutton Railway of 1910, a railway promoted by the Underground group, and subsequently built by the Southern Railway and opened on January 5, 1930. He also acted as consultant for the construction of a colliery railway at Cannock Chase in 1926. Mr. Graham's grandfather, Mr. J. Y. Akerman, was at one time Secretary to the London & Greenwich Railway Company.

STAFF AND LABOUR MATTERS

Railway Wages

The claims of the three railway trade unions for an increase in the war advance granted from January 1 which were submitted to the Railway Executive Committee at a meeting on April 26, were again discussed at a joint meeting between representatives of the Railway Executive Committee and the three trade unions on Thursday, May 23. The National Union of Railwaymen is claiming an increase of £15 a year for salaried staff and 6s. a week for conciliation staff; the Associated Society of Locomotive Engineers & Firemen is claiming an increase of 6s. a week for drivers, motormen, firemen, and engine cleaners and the Railway Clerks' Association is claiming an increase of £15 a year for the salaried grades. These claims represent the balance of the previous claims submitted by the unions at the end of last year, which were settled in February by payment of a war advance of 4s. a week for conciliation grades and £10 a year for the salaried staff from January 1. The official announcement issued at the close of the meeting stated that a full discussion took place and the meeting adjourned.

Railway Shopmen

The Railway Shopmen's National Council met in London on Thursday, May 23, to consider the claim submitted by the employees' side of the council for an increase of 10s. a week in the basic rates of staff employed under workshop conditions. The official announcement issued at the close of the meeting stated that the trade unions explained the reasons which had prompted their applications and the companies' representatives promised to consider the matter and to give a reply at a further meeting soon to be held.

The National Union of Railwaymen, which is no longer a party to the Negotiating Machinery for Railway Shopmen, has also submitted a claim for an increase in the rates of pay of workshop staff. The claim of the N.U.R. is for an increase of 5s. a week and represents the balance of the claim submitted at the end of last year for an increase of 10s. which was settled in February at a meeting of the Railway Shopmen's National Council, by increasing the war bonus from 16s. 6d. to 21s. 6d. a week, with effect from January 1. The claim of the N.U.R. was considered at a joint meeting with the railway companies on Monday, May 27, and the official announcement issued at the close of the meeting stated that the trade union explained the reasons which had prompted its application and the companies promised to give an early reply.

Women in Engineering

An agreement was reached on May 22 in regard to the wages to be paid to women who undertake war work, replacing men, in the engineering industry.

The parties to the agreement are the Engineering & Allied Employers' National Federation, the Transport & General Workers' Union, the General & Municipal Workers' Union, and the Amalgamated Engineering Union. The agreement lays down "the conditions of the extended employment of women brought temporarily into the engineering industry"—a definition of importance because of the large numbers of women regularly employed in the industry. The agreement provides that women workers may be employed on work of a suitable character hitherto performed by adult male labour subject to the following conditions:—

(a) Such women workers shall serve a probationary period of 8 weeks at the women's national schedule of time rate and bonus.

(b) At the end of the probationary period and for a further period of 12 weeks the women workers shall receive an increase as follows:—

(i) the basic rate shall be increased by one-third of the difference between the national women's schedule basic rate and the basic rate of the men they replace.

(ii) the national women's schedule bonus shall be increased in the same way by one-third of the difference between that bonus and the national bonus appropriate to the men they replace.

(c) At the end of the 20 weeks and for a further period of 12 weeks the women shall be paid:—

(i) a basic rate equal to 75 per cent. of the basic rate of the men replaced.

(ii) a national bonus equal to 75 per cent. of the national bonus appropriate to the men replaced.

(d) Thereafter:—

(i) in respect of women who are unable to carry out their work without additional supervision or assistance, the rate and bonus shall be negotiable and arranged according to the nature of the work and the ability displayed.

(ii) Women, however, who are able to carry out the work of the men they replace without additional supervision or assistance shall, at the end of the 32 weeks, receive the basic rate and national bonus appropriate to the men they replace.

(e) On payment by results the base rate and bonus shall be in accordance with sub-sections (a) to (d) of this clause. When the work is carried out without additional supervision or assistance the male worker's piecework price shall be given. When additional supervision or assistance is provided the piece prices will be negotiable under the principles of sub-section (d) (i).

Schedule of Reserved Occupations

The Ministry of Labour & National Service has announced that it has been decided to relax the operation of the Schedule of Reserved Occupations so as to permit unemployed persons who are normally employed in reserved occupations, but who have not been so employed for a period of not less than two calendar months and are not likely immediately to be placed in employment in their reserved occupations, to join the Armed Forces as volunteers, or to enrol for whole-time Civil Defence work.

If such a man is normally employed in an occupation for which there is a corresponding Service trade, and he is needed as a Service tradesman, he will be accepted for service only in the appropriate Service trade.

A.S.L.E.F. Conference

The annual conference of the Associated Society of Locomotive Engineers & Firemen opened at Southport on Monday, May 27, when the President announced that the membership had increased from 58,000 to 61,840. The conference was held away from London for the first time, although this is the society's diamond jubilee, and Mr. S. Elliott, the President, in his opening address, said that "We are confronted today with a situation that will determine our destiny. Unless the enemy is stopped the whole of the trade union movement will be destroyed." Mr. Allen, the General Secretary of the society, said the railway industry had its part to play in ensuring the safety of the country.

R.C.A. Conference

The annual conference of the Railway Clerks' Association opened at Blackpool on Monday, May 27, but on account of the war was confined to a two-day meeting. Mr. F. C. Watkins, M.P., in his presidential address, said that in the union's domestic affairs it had been able to secure some new contribution for maintaining its members' standards of life. They would strive to maintain that standard even in times of war. If there had to be a general sacrifice in the interests of the nation, they would not evade their share, but the trade union movement could not tolerate any discrimination against the workers.

National Joint Advisory Council

While the Emergency Powers (Defence) Bill was being introduced in the House of Commons on May 22 the Minister of Labour & National Service gave a description to the National Joint Advisory Council of the powers contained in the Bill, particularly those which concern industry and essential services. The advisory council having heard the Minister and recognising the gravity of the situation, resolved wholeheartedly to co-operate in the steps necessary to secure the protection of the country and allied victory. It was decided to appoint a consultative committee to advise the Minister on all matters arising out of the legislation passed by Parliament. The representatives of the British Employers' Confederation serving on the committee are: Messrs. H. F. Brand, Basil Sanderson, W. M. Wiggins, J.P., Sir Alexander Ramsay, Mr. W. A. Lee, Mr. Herbert Kay, and Sir John Forbes Watson. The Trades Union Congress representatives are: Sir Walter Citrine, Messrs. George Hicks, M.P., E. Edwards, A. Conley, J. Hallsworth, J. Kaylor, and C. Dukes.

TRANSPORT SERVICES AND THE WAR—40

British-built locomotives for France—John Gibbons on the Sud Express in wartime— Railwaymen's gallantry in France—Joint resort and railway press advertising

Railway staffs are actively supporting the National Savings Movement. Already 1,400 savings groups have been formed throughout the systems of the main-line railways and London Transport. In this total are many miscellaneous groups, including those formed at railway docks, harbours, hotels, and canals. Numbers of new groups are still being organised.

Weekend Travel for Workers

In view of the appeals made by the Government for the continuous functioning of factories engaged on work of national importance, it was announced by the Ministry of Transport on May 21 that the Railway Executive Committee was arranging with the railway companies for such railway facilities to be provided throughout the weekend (including Sundays) as were necessary to provide adequately for the transport of workers to and from those factories which were adopting the Government recommendation. On May 23 the Ministry of Transport announced that, in addition to the provision of workmen's trains during the weekend, the railways would also make arrangements to provide for the conveyance of such goods traffic to and from the factories as was essential to enable work to proceed without interruption. Factory managements were invited to notify local railway officials in advance of their requirements both in respect of the transport of workers and also the estimated weekend goods traffic required. These arrangements came into force on Sunday last, May 26.

On behalf of the London Passenger Transport Board, the Ministry of Transport announced on May 23 that on all rail services and on those road services on which workmen's tickets are normally issued on weekdays, such tickets would be issued on Sundays within the same hours, on production of an employer's certificate. For shift workers, workmen's tickets would also be issued on weekdays and Sundays on services outside the advertised hours for workmen's tickets on production of an employer's certificate.

Further Evacuation Movements

The Ministry of Health announced on May 17 that the Government had decided in the light on recent developments that it was advisable to transfer to receiving areas in Glamorgan and Monmouth school children evacuated from London and Medway towns who were in certain districts on the coasts of Kent, Essex, and Suffolk. This move took place on Sunday, May 19, and children, estimated at about 8,000, travelled in 16 special trains. A few days later a smaller movement concerned children originally evacuated to some points on the Sussex coast, who were moved inland.

On May 26, a further step was taken when 14 towns on the east and south-east coasts were scheduled as evacuation areas, that is, areas from which local children might be removed if their parents desired. The towns are Yarmouth, Lowestoft, Felixstowe, Harwich, Clacton, Frinton and Walton, Southend, Margate, Ramsgate, Broadstairs, Sandwich, Dover, Deal, and Folkestone. The movement will begin next Sunday.

The "Princess Victoria"

It was officially announced by the Admiralty on the evening of May 21 that the British minelayer, *Princess Victoria* had been sunk by an enemy mine. The *Princess Victoria*, the first diesel-driven cross-channel passenger ship owned by the L.M.S.R., was completed last year by William Denny & Brothers Limited, Dumbarton, and was placed in service on the Larne-Stranraer route on July 8, 1939. The vessel was notable for the exceptional facilities provided for carrying about 80 motorcars on one deck, which was arranged in such a way that cars could go on board under their own power and the full 80 discharged inside 20 min. by means of special ramps at Larne and Stranraer and turntables provided on the

deck of the ship. The vessel had a peacetime accommodation for approximately 1,500 passengers. Her principal dimensions were:—

Length, b.p.	305 ft.
Breadth (moulded)	48 ft.
Depth (moulded)	16 ft. 6 in.
Speed	19 knots.

The vessel was described and illustrated in THE RAILWAY GAZETTE of July 14, 1939.

New British-built Locomotives for France

On Friday last, May 24, the Director of Transportation Equipment, Ministry of Supply, took formal delivery at a famous British locomotive works of the first of the 240 locomotives of the 2-8-0 type with tenders which were ordered by the Ministry of Supply last December from the Locomotive Manufacturers' Association, as we recorded at page 819 of our December 22 issue. The first of this batch, as will be seen from the illustration on page 777, is finished in War Department livery and bears the number 300. These locomotives correspond in their design and proportions with those of the same class introduced by Mr. W. A. Stanier of the L.M.S.R. in 1935. The latest form of the L.M.S.R. engines, which are classified as class "8F," was shown in our article on page 83 of THE RAILWAY GAZETTE of January 19 last.

Certain modifications have been introduced in the locomotives destined for service in France. For example, compared with the existing L.M.S.R. engines, the connecting rods have been shortened by 5 in., and the piston rods lengthened by the same amount. Solid pins and plain bushes have replaced the needle roller bearings employed for the motion work, and all jaws, eyes and pins are case-hardened. The lubrication of the motion parts is by means of oil boxes with syphon feed instead of by grease gun and nipples, and although provision is made for continuous blowdown cocks and sand guns, these are not actually fitted when the engines are being built. Plastic magnesia and asbestos mattresses are used for boiler lagging, and the boiler is fed by two live-steam injectors instead of by one exhaust and one of the live pattern. Vacuum brake apparatus is omitted and Westinghouse equipment fitted for the train controlled by the Gresham & Craven graduable and automatic steam brake valve. (This was described and illustrated in THE RAILWAY GAZETTE of March 22, page 407.) A steam brake has been provided for use on the engine and tender. The tyre profiles instead of following the A.R.L.E. standards used in this country conform to the French standards; the difference between each of these was shown on the drawings we published at page 84 of our January 19 issue. Flaman type self-recording speed indicators are fitted, and the drawhooks, buffers, and couplings accord with French standards; safety chains are added. French articulated couplings from front and rear buffer beams are used for carriage heating in place of the R.C.H. standard employed here, and shunter commode handles are in accordance with French requirements and used by shunters as an aid for coupling the vehicles. The water pick-up gear on the tender is omitted and the bottom of the tender blanked off. There are in addition alterations in the specifications of the materials used in the engines as now illustrated. The main frames of the L.M.S.R. engine are of high-tensile steel 1 in. thick, but in those for overseas mild steel is used and the thickness increased to 1½ in. Similarly with the coupling and connecting rods; for these mild steel is substituted for manganese molybdenum steel, and the bearing springs are of carbon steel instead of silico-manganese steel. The engine is fitted with the necessary brushes for A.T.C., but for warning purposes only.

At the formal delivery last Friday it was pointed out that

it had been necessary to prepare many new drawings embodying alterations necessary for operation in France, as well as to use new patterns and tools. The Director of Transportation Equipment congratulated the Chairman of the locomotive building company on the fact that the new engine had been completed in little more than five months, whereas the normal time required for the production of a new locomotive is from nine to twelve months. In view of this and of the difficulty in obtaining materials, he expressed, on behalf of the Ministry of Supply, his thanks to the directors, management, and workmen, for a highly creditable achievement.

Transport in France

The French Minister of Public Works has forbidden long-distance transport by road in certain districts of the north, east, and south of France, as from May 17. At the same time, Paris has been included in the army zone, and all who desire to leave the city must be provided with a special pass. About half the approach roads to Paris have been reserved exclusively for military transport and for refugee traffic. For 10 days all motorbus services in Paris were suspended, as the vehicles were requisitioned on May 16 to convey Belgian refugees to evacuation centres. It is understood that 62 bus services were resumed on May 27.

Franco-Swiss Frontier

It is reported by Reuters that on May 17 the French military authorities demolished the two piers of the bridgehead on the left bank of the Rhine, near Basle. The bridgehead was left standing when the railway, which formerly ran from Hünningen to Weil, was dismantled.

Direct rail communication between France and Switzerland *via* Basle has been cut since May 19 as the result of the destruction by French sappers of part of the railway line on viaduct between St. Louis and Basle.

On May 15 it was reported that a special train conveying members of the Belgian and Dutch Legations from Berlin would leave Lindau for France that evening, and that on its journey through Switzerland the train would be provided with a Swiss military escort and a special police guard. The train did not arrive in Zurich until May 24, as it was held up for 11 days on the Swiss-German frontier.

Railwaymen's Gallantry in France

Among the civilian heroes of the present war, the railwaymen of France are assured of a proud place when the full tale comes to be told of the devoted and courageous work they have performed since the German offensive began, according to an inspiring message from *The Times* Paris correspondent, dated May 27. Toiling day and night in conditions of intense difficulty and danger and in some places being bombed and machine-gunned almost without respite, he says, the French railwaymen have carried on with a gallantry worthy of their comrades at the front. Even if there were no question of danger, the influx of hundreds of thousands of refugees, the calls of the military transport, and the necessity to save, as far as possible, material from the advancing Germans would have made their task a herculean one. When, however, there is added to this the incessant bombing of stations, yards, permanent way, and trains, the real measure of the railwaymen's achievement becomes apparent. On many occasions German airmen made a dead set at locomotives, and at the driver's cab particularly, but the men stayed at their posts, often (though not always) bringing the train through safely. The stationmaster at an important junction in one night dispatched, under heavy bombardment, 35 trains and cleared out all the locomotives, as well as successfully evacuating the personnel of the surrounding stations before he himself left last of all. For two days more he worked back along the line, directing operations, and retired to safety on a bicycle only when enemy motorised troops came in sight. Another stationmaster had his wife killed at his side by a bomb, but remained at his post until his duty had been done.

We gather that the efforts to save railway material from the advancing Germans, to which *The Times* correspondent refers, have met with a very considerable measure of success, and that vast quantities of railway rolling stock and stores

have been conveyed from Belgium and Northern France to points well behind the present fighting lines.

The courage and devotion of the French civilian railwaymen have their counterparts in the admirable behaviour of the British railway troops now serving in France. In a letter we have just received from a senior railway officer serving with the B.E.F., he says: "we have had a pretty stiff time just lately, but are bearing up. The railway troops have done jolly well under difficult and unpleasant conditions."

The Sud Express in Wartime

Mr. John Gibbons, whose entertaining travel books will be familiar to many of our readers, journeyed to Lisbon in March to receive the Portuguese Government's Camoes Prize which had been awarded one of his books, and has sent us the following account of his journey:—

I had to start from the Austerlitz station in Paris because the underground extension to the Quai d'Orsay had been closed. There was a choice of two trains to Hendaye daily, one just before nine in the morning and the other just after ten at night. Travel by night and you'll catch the next night's ordinary Spanish train with first, second, and third classes, but I took the day train which connects only with what is left of the Sud Express. The French train doesn't pretend to be anything *de luxe*; it's the ordinary three-class express timed for about 12 hours for the roughly 500 miles down to Hendaye. Have your dinner in the restaurant car before it gets there, because there are no more chances that night. At Hendaye there is half-an-hour's wrestling with the French exit formalities, after which the handful of through passengers are shepherded into a single carriage of the train and shunted across the international bridge at a charge of a special ticket. This was in March. Only a few weeks earlier the sole connection had been by taxi over the bridge. At Irun the Spanish are very particular indeed about currency. You must declare every penny of your foreign money and account for it again at the Portuguese frontier; if there is any doubt, then you are legally liable to be stripped by a searcher. The authorities sell you exactly as many pesetas as you will need for the Spanish part of the journey. The Sud Express has two carriages for Lisbon, one for the capital proper and the other to be afterwards shunted round to the pleasure-town of Estoril. They are first and second class only and all are sleepers, but it is unnecessary to pay for a sleeper. I bought a second class ticket to Fuentes d'Onoro and paid a 10 per cent. supplement entitling me to ride on the train. If it had been full, I should presumably have sat up all night on one of those little let-down seats in the corridor. As it was, I took a coupe for myself and slept very well, though without the official bed. You can do this all the way to Lisbon, paying another supplement on the Beira Alta from the Portuguese frontier to Pamphilosa and still another for the last part to Lisbon. The cost is ten escudos twice, plus two small super-taxes for speed, plus about eight pesetas for the ten per cent. of the Spanish part. At Medina del Campo a restaurant-car which officially opens at Salamanca somewhere about 8 in the morning is attached, and that's where you're really supposed to sit as far as Lisbon if you haven't got a sleeper. It rattles! The Spaniards don't seem to have mended their line from Medina to Fuentes de Onoro. The connection which used to run to Oporto from Fuentes San Esteban, by the way, is closed altogether. The Portuguese railway still runs to Barca d'Alva but the Spanish section is out of commission. If you want to go to Oporto, go round by Pamphilosa.

At Fuentes de Onoro there is another Spanish Inquisition about your money, and you reach Vilar Formoso half a mile further on with the feeling of getting out of prison. The running improves, too, and after Pamphilosa the train is making something like English speed. That by the way is where the Oporto Sud Express is attached. It is one carriage, first class only and with a luxury supplement, which has run from Oporto to connect up with the train. About 7 p.m. it reaches Lisbon, roughly 34 hours from Paris—not as fast as the old timings but not too bad for wartime. One word of warning! On the southbound run the Spanish train at Irun will wait for the French train. Indeed it practically has to, if it wants any passengers at all. But coming north, it's different and the French train which leaves Hendaye

at 11 a.m. to reach Paris about 12 hours later is making no promises about waiting for the Spanish train. I know, because I myself nearly caused an extra European crisis at Irun coming back. Well, they'd taken all my Spanish money away except for five pesetas kindly left me to pay for my breakfast. Then I carelessly and absent-mindedly ate an extra and uncovenanted-for bun, and when the waitress wanted another two pesetas I hadn't got it and they had to reopen the station bank to deal with the matter and we all nearly missed the French train.

The Simplon-Orient and the Taurus Expresses

From Monday last, May 27, the Simplon-Orient Express has been curtailed, and now runs only between Istanbul and other Balkan points and Milan, the Milan-Paris section having been suspended.

We have just been advised that the line between Mosul and Baghdad will be open for traffic on July 1 next. The new timetable provides for three trains weekly in each direction between Haidar Pacha and Baghdad West. This, of course, amounts to the extension of the Taurus Express through to Baghdad. We are also informed that bookings direct to Kirkuk (which involves using the road motor service of the Iraq State Railways between Mosul and Kirkuk) are being withdrawn from July 1, and that through journeys to Iran (Persia) will be made by way of Baghdad and Khaniqin.

Restrictions on Palestine-Syrian traffic at the coast frontier point of Ras-en-Naqura were lifted on May 21.

Transit Traffic through Eastern Europe

The Latvian State Railways announced on May 23 that they would no longer accept goods for transport to Italy and Switzerland through Germany, as the Reichsbahn had suspended all transit traffic.

Rumours current in economic circles in Kaunas, Lithuania (which have received no official confirmation), are quoted by Reuters to the effect that certain numbers of Russian oil tank wagons on their way from Russia to Germany have been halted in Lithuania and sent back.

Allegations are made by U.S.A. newspaper correspondents in Roumania that transit traffic by rail between Russia and Germany through Roumania has fallen to a very low level. It is stated that, "of 450,000 tons of merchandise scheduled to travel over the Cernăuți-Lwow-Krakow-Berlin railway line between December 3, when the line opened, and May 1, only 28,540 tons actually went. Traffic has been systematically sabotaged."

The Roumanian State Railways have recently been called upon to handle very heavy military traffic. On May 23 it was estimated that nearly 300,000 reservists were conveyed by railway to the northern frontiers of Roumania, a movement described as one of the greatest military concentrations in Roumanian history.

Railway Traffic in Norway

It is learned from a Stockholm source that railway communications between Oslo and Trondheim, and between Oslo and Bergen, have not yet been restored, but it is understood that the German authorities hope to establish a skeleton service between Oslo and Trondheim at the beginning of June, and between Oslo and Bergen at the end of June.

Sweden

Most private motorcars in Sweden have been laid up since May 19 as the result of a rigorous new petrol-rationing scheme introduced on that day. The Royal Automobile Club of Sweden has issued instructions to car owners explaining simple devices for rendering motorcars unusable by possible invaders.

A general blackout, which was imposed in Sweden on May 12, was rescinded on May 24.

Joint Resort and Railway Press Advertising

When it was agreed by the Railway Executive Committee that, in spite of the war, joint resort advertising should be continued, an important feature was felt to be the desirability of maintaining the very happy relationship between

the railway companies and the mayors, councils, and publicity & entertainments officers throughout the British Isles, owing largely to the contacts brought about by advertising jointly in the press. It was, therefore, decided to carry on with resort advertising for 1940. When the paper shortage became acute, and the newspapers cut down their size, in many cases from as many as 24 pages to 8, the newspapers for the first time had to scale down arbitrarily those who wished to advertise in the weekly resort feature pages. On one day an order was placed for over 55 in. but only 14 in. could be given. The increase in rates by about 25 per cent. formed an additional complication. The difficulties were so great that joint working was necessary between the four group companies and the resorts. Some of the resorts booked space through agents, and, therefore, it was necessary, when restricting the maximum size, to have the goodwill of the resorts which did not work with the railway companies, but which were members of the Health & Pleasure Resorts Association.

First it was felt that the amount of space available must be known in advance, and, therefore, it was necessary for the railway companies and resorts to run a certain amount of risk by taking space in the four popular national papers (where space shortage was most acute) to the end of June, thus covering the heavy period when so many British resorts wish to advertise. Committee meetings and sub-committee meetings were held, and the press was interviewed, and its goodwill obtained. The resorts, sacrificing personal interests to the main cause, put themselves in the hands of the railway companies. Much research work and many experiments were made to get schemes which would be fair to everybody. Broadly, the scheme consisted of making the maximum size no bigger than 2 in. with a secondary size of 1 in. for the smaller resorts. Large and wealthy towns, which were accustomed to take 6 in., co-operated. The sub-committee consisted of Mr. D. Y. Faulkner, L.M.S.R.; Mr. W. Atkinson and Mr. C. W. Elsworthy, L.N.E.R.; Mr. J. Wells, G.W.R.; Mr. G. R. Walter, S.R.; who worked untiringly and eventually prepared a chart 30 ft. long showing the exact size of every advertisement to the end of June, into which were fitted the various resorts obtaining their proportions by means of size and frequency. When one realises the rivalry of the past, not only among resorts themselves, but among the individual railways, this combined effort is a very creditable example of co-operative work for the railways as a whole.



Railway sub-committee rationing space for British railways resort advertising on a chart 25 ft. long

QUESTIONS IN PARLIAMENT

Railway Workshops

Mr. S. P. Viant (Willesden West—Lab.), on behalf of Mr. H. C. Charleton (Leeds South—Lab.), on May 22, asked the Minister of Supply if he was aware that numbers of skilled workmen employed by the L.M.S.R. at Wolverton works were being drafted to various parts of the country because there was no work for them at Wolverton; and whether these workshops could be used to produce munitions during the present crisis.

Mr. Herbert Morrison (Minister of Supply): I am informed that some of the men normally employed at Wolverton have been transferred temporarily to other work in the railway companies' service. As regards the production of war supplies, all practicable use is being and will be made of these and other railway shops subject to the necessity for maintaining the railways to the essential standard of efficiency.

Mr. P. J. Noel-Baker (Derby—Lab.): Will the Minister look into the question of the utilisation of railway shops throughout the country for the purposes of increasing our output of munitions, bearing in mind that we are producing less now than we did in the last war?

Mr. Morrison: Yes, Sir.

Increased Railway Fares

Mr. V. La T. McEntee (Walthamstow West—Lab.), on May 22, asked the Minister of Transport whether he was aware that the rail fare from Manor House to Leicester Square had recently been raised from 5d. to 6d. and that from Bow Road to Westminster from 5d. to 5½d.; and would he say why in one case the increase was 10 per cent. and in the other case 20 per cent.

Sir John Reith: I would refer my hon. friend to the reply which my predecessor gave on May 8 to the Member for Seaham (Mr. Shinwell). As was then pointed out, the increase authorised by the Minister's Order was 10 per cent., subject to certain fractions rules, the operation of which was explained. General rules are almost bound to produce some anomalies, and the present is one. The fractions rules provide that ordinary fares are to be adjusted to the nearest 1d. Under ½d. is dropped; ½d. and over is charged as 1d. With workmen's fares, under ½d. is dropped; ½d. and less than ¾d. is charged as ¾d.; ¾d. and over is charged as 1d. The latter rule has not been applied to local workmen's fares on London Transport railways (other than the Metropolitan Railway), because they have charged ordinary single fare for the double journey, and it was desired not to disturb this arrangement. Thus the ordinary single fare and the workmen's return fare were increased from 5d. to 6d. between

Manor House and Leicester Square, both local stations of the Board. The ordinary single fare from Bow Road to Westminster was also increased from 5d. to 6d. Bow Road, however, is a joint station with the London Midland & Scottish Railway, so that the special rule was applied to the workmen's return fare, which was increased from 5d. to 5½d.

London-Durham Railway Service

Mr. J. Ritson (Durham East—Lab.) and Mr. J. Batey (Spennymoor—Lab.), on May 22, asked the Minister of Transport when the passenger trains between London and Durham, suspended in order to run coal trains, would be restored, why trains from King's Cross did not stop at Durham to set down passengers and thus prevent the change and long wait at Darlington, and what steps he was taking to improve this service.

Sir John Reith (Minister of Transport) replied that the present timetable provided three through trains daily between London and Durham in both directions, and an additional one on Fridays. Two other daily services each way involved a change at York or Darlington. This was the best possible under present conditions. He could not say when the heavy demands for the transport of coal and other essen-

tials would be sufficiently reduced to permit improvements to be made.

Mr. Ritson asked the Minister if he was aware that boats in the docks were awaiting coal, and why it was necessary that it should be brought by rail. The last train for any soldier going north on leave was, he said, at one o'clock from London, and involved a 1½-hr. wait at Darlington.

Sir John Reith replied that the Ministry of Transport was in touch with the Department of Mines and the Ministry of Shipping about the transport of coal generally, and that he would ask the Railway Executive Committee to look into the second point.

Railway Coal Wagons

Mr. James Griffiths (Llanelli—Lab.), on May 22, asked the Minister of Transport whether the difficulties in the use of railway coal wagons had been overcome; and what steps had been taken to increase the number of wagons available.

Sir John Reith: The railways are now experiencing no difficulty in providing sufficient empty wagons to meet colliery requirements. In view of this and of many other urgent demands it is not at present thought necessary to add to the number available. In reply to a further question, he gave an assurance that everything possible was being done now to guard against trouble next winter, though the trouble which was occasioned before was not due to the shortage of wagons.

PARLIAMENTARY NOTES

Colonial Development

Mr. A. Creech Jones (Shipley—Lab.), speaking in the debate on the motion for the Second Reading of the Colonial Development and Welfare Bill on May 21, said that if they studied the proposals which accompanied the Bill, they must admit that if progress in the Empire was to be made, many of the Treasuries must be relieved of the existing crushing burdens. Therefore, they must support the suggestions which had been put to them that certain of these big debts of the Colonies should be wiped out altogether and that the British Treasury should bear them. There was £5,500,000 to be paid in respect of the Uganda Railway in Kenya. The history of this particular railway was a long and tortuous story, but he thought in the long run it was sound business for them to exempt the Kenya Government from the burden. He would like a little more information about the £1,000,000 which they were wiping out so far as the Tanganyika and Nyasaland railways were concerned.

Mr. Ernest Evans (University of Wales—Lib.) said he was glad that the Bill included provision for wiping out the liability which the Government of Nyasaland incurred by reason of its

guarantees in respect of the Trans-Zambesia Railway. That was a very valuable concession.

Colonel C. E. Ponsonby (Sevenoaks—C.) said that one of the main reasons for the building of the Uganda Railway was the abolition of the slave trade. There was no idea whatever of making a profit, and he could not make out really why the money was left as a loan. There was no hope of the railway being self-supporting.

SANTANDER-MEDITERRANEAN RAILWAY DEBT.—The Chairman of the Central Mining & Investment Corporation, Mr. F. R. Phillips, referred at the annual general meeting on May 16, to the corporation's subsidiary, the Anglo-Spanish Construction Company. He said no material change had taken place in the situation of the company in 1939. They hoped that Anglo-Spanish relations would grow in friendliness and that, with the return of normal and prosperous conditions in Spain, a beginning would be made with the settlement of the long outstanding debts owing both to the Santander-Mediterranean Railway and to the Anglo-Spanish Construction Company.

NOTES AND NEWS

Argentine Railway Accident.—It is reported by Reuters that, as a result of a collision in which a Buenos Aires-Bahia Blanca express was involved on May 27, ten persons lost their lives.

More Export Groups Formed.—The total number of export groups is now 126. The latest list, of 21 groups, issued by the Board of Trade, includes the following: File trade, c/o File Manufacturers' Association, Norris Deakin Building, Sheffield, 1; Hacksaw trade, c/o British Hacksaw Makers' Association, Norris Deakin Building, Sheffield, 1.

Grand Union Canal.—The Minister of Transport, on May 2, made a warrant of abandonment under Section 45 of the Railway and Canal Traffic Act, 1888, authorising the abandonment by the Grand Union Canal Company of its Cumberland Arm and Basin, which comprises that basin and the canal cut extending therefrom to the main Regents Section of the canal except the portion situated within a distance of 340 ft. from the St Mark's footbridge over the canal in Regents Park.

Canadian National Earnings.—Gross earnings of the Canadian National Railways in April, 1940, were \$17,666,164, an increase of \$3,213,862 in comparison with April, 1939. Operating expenses amounted to \$15,977,183, with an increase of \$1,848,463, resulting in net earnings of \$1,688,981, which were \$1,365,399 higher than those for April, 1939. Aggregate gross earnings for the first four months of 1940 totalled \$71,040,279, an increase of \$15,390,536 in comparison with the first four months of 1939, and the aggregate net earnings of \$7,126,942 compare with a deficit of \$1,966,355.

Entre Rios Debentures Moratorium.—In accordance with the provisions of the scheme of arrangement approved at a meeting of the holders of 5 per cent. debentures, held on June 9, 1939, the Joint Special Committee representing the Association of Investment Trusts and the British Insurance

Association Investment Protection Committee has agreed that the interest moratorium at present in force until July 1, 1940, shall be extended to July 1, 1941. The scheme of arrangement was originally approved in 1933 and the moratorium has been extended from time to time.

Stimulating Sunday Travel in London.—The London Passenger Transport Board is conducting a press, poster, and leaflet campaign to stimulate travel on Sundays. *Sunday Outlook*, a weekly leaflet containing notes about places to go to and things to do on Sunday, is being distributed at Underground stations; every poster suggests one in-town and one out-of-town attraction, thus providing for vagaries of the weather; advertisements are being inserted in the evening newspapers.

Railway Benevolent Institution.—The eighty-second annual meeting of the members of the Railway Benevolent Institution will be held in Room "C," Euston station, London Midland & Scottish Railway Company, London, N.W.1, on Friday, June 28, at 4 p.m., to receive the report of the board of management, admit to school benefits one child in the officers' department, and to transact the ordinary business of the institution. The board will appoint to contingent annuities 53 widows and four members in the officers' department, and 1,094 widows and 473 members in the servants' department, being applicants in excess of the number to whom permanent annuities can be granted. There will be no ballot on this occasion.

Landslide on L.M.S.R. Cumberland Coast Line.—For nearly a month from 11.15 a.m. on February 7 until 5 p.m. on March 3, both up and down tracks of the coastal route between Workington and Whitehaven, L.M.S.R., were blocked owing to a serious landslide between Harrington and Parton stations. Passenger traffic was conveyed between Workington and Whitehaven by motorbus, and freight traffic was diverted over the inland route via

Moor Row. No fewer than 10,000 tons of rock and soil had to be removed; men were engaged continuously day and night in clearing the obstruction, while to ensure further safety it was necessary for some of the overhanging rock to be blasted away. Even after traffic had been resumed on March 3, subject to a 5 m.p.h. speed restriction, possession of the lines on Sundays was still necessary for some weeks for the removal of debris.

British and Irish Railway Stocks and Shares

Stocks	Highest 1939	Lowest 1939	Prices	
			May 28, 1940	Rise/ Fall
G.W.R.				
Cons. Ord.	38	21½	31½	-3½
5% Con. Pref.	92	71	88½	-6
5% Red. Pref. (1950) ..	98	83	100½	-2
4% Deb.	103	91	96	-2
4½% Deb.	105½	93½	100½	-2½
4½% Deb.	110	99	102½	-3½
5% Deb.	121	109½	115½	-4
2½% Deb.	63½	54	62½	-1
5% Rt. Charge	117	104	109	-3
5% Cons. Guar.	111	96½	107	-2
L.M.S.R.				
Ord.	17	9½	13½	-1½
4% Pref. (1923)	46½	20	33	-4½
4% Pref.	63½	37½	52½	-1½
5% Red. Pref. (1955) ..	83	58½	82½	-1
4% Deb.	98½	85	92	-2½
5% Red. Deb. (1952) ..	109	101½	106	-1
4% Guar.	87½	73	80½	-3
L.N.E.R.				
5% Pref. Ord.	5½	3½	3½	-½
Def. Ord.	3½	1½	1½	-½
4% First Pref.	38½	19	30	-6
4% Second Pref.	15	7½	10	-3½
5% Red. Pref. (1955) ..	55	38	52½	-10
4% First Guar.	78½	60	69½	-6
4% Second Guar.	68½	47	57½	-5½
3% Deb.	71½	57	62	-1½
4% Deb.	93	76	82½	-3½
5% Red. Deb. (1947) ..	106½	98	100½	-2
4½% Sinking Fund Red. Deb.	104½	96	100½	-2
SOUTHERN				
Pref. Ord.	78	46½	50½	-4½
Def. Ord.	19½	7	10	-3½
5% Pref.	100	76	88½	-6
5% Red. Pref. (1964) ..	102½	94	100½	-2
5% Guar. Pref.	116½	103	108	-2
5% Red. Guar. Pref. (1957) ..	112½	102½	105	-2
4% Deb.	103	91½	96	-1
5% Deb.	118½	109½	115½	-4
4% Red. Deb. (1962-67) ..	106	98	100	-2
4% Red. Deb. (1970-80) ..	102	96	100	-2
FORTH BRIDGE				
4% Deb.	98½	81	92½	—
4% Guar.	95	80	91	—
L.P.T.B.				
4½% "A"	115	103	106	-2½
5% "A"	123	106½	111½	-4½
4½% "T.F.A." ..	105	100½	102	—
5% "B"	117½	102	104½	-4
"C"	84	63½	37½	—
MERSEY				
Ord.	24½	17½	23½	—
4% Perp. Deb.	93½	88½	91	—
3% Perp. Deb.	77	65½	65½	—
3% Perp. Pref.	55	49½	54½	—
IRELAND				
BELFAST & C.D.				
Ord.	6	3	4	—
G. NORTHERN				
Ord.	6	2½	4	—
G. SOUTHERN				
Ord.	13½	8	9½	-½
Pref.	26	10	22½	—
Guar.	40½	22	29	—
Deb.	57	45½	51½	—

Irish Traffic Returns

IRELAND	Totals for 20th Week			Totals to Date		
	1940	1939	Inc. or Dec.	1940	1939	Inc. or Dec.
	£	£	£	£	£	£
Belfast & C.D. (80 miles)	pass. 2,961 goods 416 total 3,377	2,106 430 2,536	+ + +	46,421 9,590 56,011	36,575 8,660 45,235	+ + +
Great Northern (543 miles)	pass. 13,350 goods 11,850 total 25,200	9,150 10,050 19,200	+ + +	203,050 231,150 434,200	177,800 204,100 381,900	+ + +
Great Southern (2,076 miles)	pass. 40,615 goods 40,387 total 81,002	30,801 36,828 67,629	+ + +	616,751 888,200 1,504,951	599,511 833,588 1,433,099	+ + +
L.M.S.R. (N.C.C.) (271 miles)	pass. 4,660 goods 3,940 total 8,600	3,750 3,130 6,880	+ + +	88,370 70,080 158,450	66,680 59,140 125,820	+ + +

OFFICIAL NOTICES

London and North Eastern Railway

NOTICE is hereby given that, for the purpose of preparing the warrants for interest on the Company's 3 per cent. and 4 per cent. Debenture Stocks and 4½ per cent. Sinking Fund Debenture Stock for the half-year ending 30th June, 1940, the balances will be struck as at the close of business on 11th June, and interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the above-mentioned Stocks should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5.0 p.m. on 11th June.

By Order,
P. J. DOWSETT,
Secretary.

Marylebone Station,
London, N.W.1.
31st May, 1940.

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

CONTRACTS AND TENDERS

The Jaipur State Railway has placed an order with W. G. Bagnall Limited for three metre-gauge "0" class engines and tenders, to the inspection of Messrs. Robert White & Partners.

D. Wickham & Co. Ltd. has received an order from the Chilean State Railways for 15 permanent way maintenance trolleys.

The Bengal-Nagpur Railway has placed an order with John Thompson (Kennicott Water Softeners) Limited for wood wool for Kennicott water softeners.

The Italian Government has ordered 36,000 tons of South African coal for delivery to its East African possessions.

The Iran Customs Administration is calling for tenders by July 3 for one motor crane. D.O.T. No. T. 19478/40.

The municipality of Port Elizabeth, South Africa, is enquiring for a 25,30-cwt. battery-driven tower wagon and for low-tension cable. Tenders to be in by June 20. D.O.T. No. T. 19657/40.

The East Indian Railway is calling for tenders by August 16 for the fabrication and supply of steelwork for the regirding of Dufferin bridge, at Benares, which carries two broad-gauge tracks, a roadway, and two footways. The amount of steelwork involved is nearly 10,000 tons.

The Ministry of Supply has issued a new direction No. 2, dated May 25, under the Control of Iron & Steel (No. 8) Order, 1940, substituting revised prices for sheets of 3 mm. and over in thickness.

So far 46 concerns making stationary engines, marine engines, and diesel locomotive engines, have joined the Internal-Combustion Engine War Export Group. A pamphlet has been issued by the group describing how the necessary supplies of controlled materials may be secured, as well as specimens of the numerous forms to be completed. The group has also issued a supplement to a booklet, published on March 19, which describes the export trade materials scheme of the group. This supplement sets out the detailed procedure being brought into operation under the scheme to secure for members a continuous supply of the controlled materials necessary for the maintenance and development of export trade and

to ensure that controlled materials supplied for that purpose are used exclusively for it.

British Timken Limited has acquired the controlling interest in the Fischer Bearings Co. Ltd. of Wolverhampton. This will affect production of key components for aircraft, car, railway rolling stock, and machine tool construction and almost any rotating plant and equipment. Fischer Bearings began production in Britain in 1936; it was founded by the German concern Kugelfischer A.G. The company occupies a substantial portion of the old Sunbeam car works at Wolverhampton and employs a large number of workers in the production of all sizes of ball bearings. British Timken, which has extensive works in Birmingham, is the largest tapered roller bearing maker in the Empire and is also a large manufacturer of parallel roller and ball bearings. Its production ranges from motor cycle

bearings to those weighing over 3½ tons for steel rolling mills. British Timken began ball bearing manufacture six years ago and the new development will greatly strengthen its manufacturing and technical resources in this field. The directors intend to concentrate the manufacture of ball bearings at Wolverhampton; this will give room in the Timken works at Birmingham for the expansion of tapered roller bearing production.

New arrangements to co-ordinate the demands for U.S.A. machine tools in England are being brought into force on June 17, under the aegis of the Controller of Machine Tools, Ministry of Supply. All purchases of new machine tools will be made by the British Supply Board in Canada and the U.S.A. Purchases normally will be made through agents who have registered with the Machine Tool Control. Full particulars can be obtained from a circular just issued by the Controller of Machine Tools, 35, Old Queen Street, London, S.W.1.

RAILWAY AND OTHER REPORTS

Ribble Motor Services Limited.—The directors of this subsidiary of Tilling & British Automobile Traction Limited and the London Midland & Scottish Railway Company jointly, have declared a final dividend of 6 per cent., making 10 per cent. for the year to March 31 last, the same as for the previous twelve months.

British Electric Traction Co. Ltd.—The directors announce that, in view of the provisions of the Limitation of Dividends Bill, they are unable at present to make any recommendation as to the dividend to be paid for the year ended March 31 last. It is the intention of the board to make application to the Treasury at the earliest opportunity for an increase in the maximum distribution on the deferred ordinary stock permitted under the general provisions of the Bill. The gross revenue for the year amounts to £745,874, compared with £728,513 for the previous 12 months, and the profit (subject to audit) after charging debenture interest and expenses, but before providing for income-tax, is £603,054, an increase of £16,000. It is thought necessary to provide £50,000 for E.P.T., and the amount ultimately

available for dividend on the deferred stock would in ordinary circumstances be enough to pay a dividend of 50 per cent., less tax.

Maidstone & District Motor Services Limited.—This subsidiary of Tilling & British Automobile Traction Limited and of the Southern Railway Company jointly, reports that, after providing £96,260 for depreciation (against £98,634) and placing £20,000 (same) to reserve, the directors propose to pay a final dividend of 5 per cent. and a bonus of 1½ per cent. on the ordinary shares (making again a total of 11½ per cent.) and carry forward £34,456 (£28,840).

Scammell Lorries Limited.—Gross profits for the year 1939 was £168,858 which compares with £137,366 for 1938. Trading profit was £87,024 (£59,006) and the net balance, after interest, income tax, N.D.C., and E.P.T., was £27,034 (£35,558). The dividend is again 10 per cent., general reserve receives £10,000 (£20,000), and £17,241 (£16,334) is carried forward. The report states that the output of the factory exceeded that of any previous year. Production for Government continued at increasing pressure.

Railway Stock Market

As was to be expected, the stock and share markets have been entirely under the influence of the war news, and in all sections there was a further marking down and widening of quotations. Evidence of the determination to take more than a short view was again provided by the absence of heavy selling, and subsequently the general market undertone was inclined to improve under the lead of British Funds. Nevertheless the volume of business was even smaller than a week ago, and in many directions quotations were not adequately tested by dealings and were, therefore, nominal in character. Home railway securities moved in accordance with the surrounding tendency, and the decline in debenture stocks has brought the yields obtainable well out of line with those on other first class investment securities. It is being urged in many quarters that, in view of the high investment status of home railway debentures, it would be prudent to fix minimum prices as a safeguard that these stocks will not have to bear the brunt of liquidation in times of market uncertainty. The further fall in junior stocks resulted partly from the fear that the benefits of the financial agreement with the Government will be further reduced, bearing in mind that

Government-controlled establishments are to be subject to E.P.T. at 100 per cent. It, therefore, seems unlikely, according to prevailing market views, that the income of the railways will exceed the minimum guaranteed by the Government. Moreover, in view of the possibility that the railways may decide to set aside special sums as reserves against the danger of air-raid damage in excess of the amount allowed under the pooling agreement, it is hardly surprising there has been a further revision of market dividend estimates in respect of the junior stocks. Nevertheless there seems little doubt that, in comparison with other securities, those of the main-line railways have been unduly affected by recent developments and the conditions ruling on the Stock Exchange. There have been some heavy declines in preference stocks, and also in the guaranteed issues; current values of the latter would appear to make little allowance for the fact that they are cumulative as to dividend.

L.M.S.R. ordinary, which a week ago was 15, has since gone back further to 13½, and on balance the senior preference lost two points to 52½, and the 1923 preference was no better than 32½, compared with 38 a week ago. The 5 per cent. debentures

have now been tested by dealings, and the quotation is a point down at 106. The 4 per cent. debentures have been lowered from 94½ to 92½. At 32, Great Western ordinary showed a loss of three points, but the 5 per cent. preference recorded a heavy fall from 94 to 87½. Great Western 4 per cent. debentures were quoted at 96, which compares with 98½ a week ago. Among stocks of the Southern Railway, the preferred was at 50, and now yields 10 per cent. on the basis of the full dividend. The deferred stock lost three points and was around 10, the 5 per cent. preference was marked down from 94 to 87½; the 5 per cent. guaranteed was 107½; and the 4 per cent. debentures 96.

L.N.E.R. preference stocks were again marked down, the first being 29½, compared with 37 a week ago, and the second 10, compared with 13½. Moreover, the first guaranteed was 69½, compared with 75, and the second 57½, compared with 63. The 3 per cent. debentures went back from 63½ to 62, and the 4 per cent. debentures from 85 to 82½. At 35 London Transport "C" stock showed a loss of 2½ points.

Argentina and other securities of foreign railways were unable to move against the general market trend. Canadian Pacific debentures were lower, despite the favourable yield, and the preference stock and common shares failed to respond to the improving traffic position.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1939-40	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices				
			Total this year	Inc. or Dec. compared with 1939		Totals		Increase or Decrease		Highest 1939	Lowest 1939	May 28, 1940	Yield % (See Note)	
						This Year	Last Year							
South & Central America														
Antofagasta (Chili) & Bolivia	834	19.5.40	£ 22,310	+ £ 10,550	20	£ 380,470	£ 269,730	+ £ 110,740	Ord. Stk.	10½	4½	7	Nil	
Argentine North Eastern	753	18.5.40	ps. 191,200	ps. 9,200	47	ps. 7,037,200	ps. 7,350,300	- ps. 313,100	"	4½	2½	3½	Nil	
Bolivar	174	Apl. 1940	4,650	+ 1,000	17	16,240	15,350	+ 890	6 p.c. Deb.	7½	5½	7	Nil	
Brazil	...	...	...	...	...	...	...	...	Bonds	5½	4½	7	Nil
Buenos Ayres & Pacific	2,801	18.5.40	ps. 1,330,000	- ps. 206,000	47	ps. 64,391,000	ps. 67,075,000	- ps. 2,684,000	Ord. Stk.	5½	2	2½	Nil	
Buenos Aires Central	190	13.4.40	£ 70,600	+ £ 700	42	£ 4,011,700	£ 4,199,800	- £ 188,100	Mt. Deb.	14	8	13½	Nil	
Buenos Ayres Gt. Southern	5,082	18.5.40	ps. 1,895,000	- ps. 196,000	47	ps. 108,889,000	ps. 108,920,000	- ps. 31,000	Ord. Stk.	13½	4½	6	Nil	
Buenos Ayres Western	1,930	18.5.40	ps. 677,000	- ps. 291,000	47	ps. 36,501,000	ps. 35,117,000	+ ps. 1,384,000	"	10½	4	4½	Nil	
Central Argentine	3,700	18.5.40	ps. 1,786,200	- ps. 297,700	47	ps. 81,535,450	ps. 89,516,100	- ps. 7,980,650	"	11½	4	5	Nil	
Do.	...	...	...	...	...	...	...	...	Divd.	4	1½	3	Nil
Cent. Uruguay of M. Video	972	18.5.40	24,740	+ 3,724	47	997,601	870,741	+ 126,860	Ord. Stk.	2½	1½	2½	Nil	
Costa Rica	188	Mar. 1940	22,121	- 1,348	40	158,217	200,680	- 42,463	"	24½	18	22	9½	
Dorada	70	Apl. 1940	11,600	- 300	17	46,100	52,300	- 6,200	1 Mt. Db.	104½	102	102½	5½	
Entre Rios	810	18.5.40	ps. 247,400	- ps. 36,700	47	ps. 10,946,000	ps. 11,747,600	- ps. 801,600	Ord. Stk.	6	3	3	Nil	
Great Western of Brazil	1,016	18.5.40	8,300	+ 2,300	20	234,800	198,100	+ 36,700	Ord. Sh.	3/-	1/2½	7½	Nil	
International of Cl. Amer.	794	Mar. 1940	\$591,812	- \$60,622	13	\$1,762,134	\$1,750,144	+ \$11,990	"	7½d.	7½d.	1	Nil	
Interoceanic of Mexico	...	...	...	...	...	...	...	...	1st Pref.	7½d.	7½d.	1	Nil
La Guaira & Caracas	22½	Apl. 1940	6,040	+ 160	17	28,015	21,700	+ 6,315	Stk.	7	6½	6½	Nil	
Leopoldina	1,918	18.5.40	22,311	+ 7,281	20	438,226	382,756	+ 55,470	Ord. Stk.	2½	1½	1½	Nil	
Mexican	483	14.4.40	\$284,000	- \$65,700	15	\$4,631,300	\$4,756,900	- \$125,600	"	1½	1	1	Nil	
Midland of Uruguay	319	Apl. 1940	12,921	+ 6,073	44	106,712	89,923	+ 16,789	"	2/-	1	1	Nil	
Nitrate	386	15.5.40	4,886	- 313	19	69,909	48,670	+ 21,239	Ord. Sh.	2½	1½	2	64	
Paraguay Central	274	18.5.40	\$3,298,000	+ \$584,000	47	\$147,365,000	\$144,388,000	+ \$2,977,000	Pr. Li. Stk.	45½	36	40	15	
Peruvian Corporation	1,059	Apl. 1940	73,832	+ 12,347	44	680,483	670,650	+ 9,833	Pref.	1½	¾	3	Nil	
Salvador	100	13.4.40	£24,024	+ £4,574	42	£832,101	£882,139	- £50,038	Pr. Li. Db.	19½	16	15	Nil	
San Paulo	153½	19.5.40	49,298	+ 12,171	20	694,299	610,730	+ 83,569	Ord. Stk.	38	20	34½	7½	
Taltal	160	Apl. 1940	3,085	+ 1,390	44	26,220	29,225	- 3,005	Ord. Sh.	8	6/6	1½	7½	
United of Havana	1,353	18.5.40	25,856	+ 3,066	47	1,140,645	1,111,663	+ 28,982	Ord. Stk.	2	1	1	Nil	
Uruguay Northern	73	Apl. 1940	1,225	+ 492	44	11,226	9,837	+ 1,389	Deb. Stk.	2	1	2	Nil	
Canada														
Canadian National	23,695	21.5.40	916,243	+ 133,585	20	16,960,847	13,392,373	+ 3,568,474	"	74½	60	70	5½	
Canadian Northern	...	...	...	...	...	...	...	...	Perp. Dbs.	100½	76	95½	4½
Grand Trunk	...	...	...	...	...	...	...	...	4 p.c. Gar.	7½	3½	6	Nil
Canadian Pacific	17,162	21.5.40	578,200	+ 12,000	20	11,384,400	9,501,600	+ 1,882,800	Ord. Stk.	7½	3½	3½	Nil	
India														
Assam Bengal	1,329	30.4.40	45,187	+ 6,529	4	135,060	120,437	+ 14,623	Ord. Stk.	76½	60	79½	3½	
Barsi Light	202	10.5.40	3,300	- 15	6	17,220	13,095	+ 4,125	Ord. Sh.	56½	50½	43½	8½	
Bengal & North Western	2,096	30.4.40	94,001	+ 10,277	4	277,613	236,076	+ 41,537	Ord. Stk.	277½	229½	269	5½	
Bengal Dooars & Extension	161	10.5.40	4,134	+ 1,657	6	15,159	10,123	+ 5,036	"	91	84½	215	3	
Bengal-Nagpur	3,267	30.4.40	253,275	+ 20,815	4	749,250	696,847	+ 52,403	"	94½	83½	95½	4½	
Bombay, Baroda & Cl. India	2,986	10.5.40	316,500	+ 43,575	6	1,175,925	1,066,350	+ 109,575	"	108	90	107½	5½	
Madras & Southern Mahratta	2,967	30.4.40	197,175	+ 17,883	4	565,725	533,234	+ 32,491	"	104½	92	99½	7½	
Rohilkund & Kumaon	571	30.4.40	20,959	+ 4,070	4	66,240	49,071	+ 17,169	"	280	263	278	5½	
South Indian	2,531½	30.4.40	120,718	- 820	4	353,187	351,773	+ 1,414	"	102½	88	92½	5½	
Various														
Beira	204	Feb. 1940	64,706	-	21	358,968	...	...	"	...	...	...	...
Egyptian Delta	623	20.4.40	4,686	-	348	9,941	10,199	- 258	Prf. Sh.	1	1	1	Nil	
Kenya & Uganda	1,625	...	...	...	...	...	...	...	"	...	...	...	...
Manila	...	...	...	...	...	...	...	...	B. Deb.	55	39	49½	7½
Midland of W. Australia	277	Mar. 1940	12,505	- 4,071	40	115,376	138,753	- 23,377	Inc. Deb.	91½	87½	82½	4½	
Nigerian	1,900	31.3.40	46,961	- 23,648	52	2,108,686	2,150,449	- 41,763	"	...	...	...	...
Rhodesia	2,442½	Feb. 1940	366,546	-	21	1,887,026	...	...	"	...	...	...	...
South Africa	13,288	4.5.40	643,613	- 4,432	5	3,273,674	3,097,239	+ 176,435	"	...	...	...	...
Victoria	4,774	Jan. 1940	989,333	+ 206,698	31	5,827,335	5,516,376	+ 310,959	"	...	...	...	...

Note. Yields are based on the approximate current prices and are within a fraction of ½. Argentine traffics are now given in pesos. † Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend